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SOME ISSUES IN EMERGENCY MANAGEMENT
—Public Views in 1987—

FINAL REPORT

FOR

FEDERAL EMERGENCY MANAGEMENT AGENCY
WASHINGTON D.C., 20472

FEMA COOPERATIVE AGREEMENT NUMBER: EMW-K-1024
WORK UNIT: 4851B

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MANAGEMENT AGENCY."

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DECEMBER, 1987

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Executive Summary

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Federal Emergency Management Agency
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Approved for public release: distribution unlimited

EXECUTIVE SUMMARY

This paper addresses some salient issues that are questioned and debated in the process of decision making on civil defense policy, with an emphasis on those issues related to planning and preparedness for a nuclear attack. Relative to individual or family planning for emergencies, the civil defense community's responsibilities and concerns encompass those emergencies and hazards that effect, or have the potential to effect, significant segments of the population, that require the coordinated efforts and expertise of various emergency management specialists and that are, inherently, beyond the realm of individual coping capabilities. The processes involved in planning adaptive measures to cope with natural disasters, technological hazards or even of a nuclear attack focus on similar terminal objectives. These objectives include anticipating the threat, taking preventative action when possible, developing mechanisms to effectively warn the public at risk, as well as provide them with the information necessary to initiate self-help actions, implementing measures to minimize the potential impact of the emergency and to minimize the consequences suffered in the event of an actualized emergency.

Individuals recognize their own inability to institute the preparedness measures necessary to cope with most natural and technological emergencies, seldom question the value of such measures and therefore expect the appropriate social organizations to take action in their behalf. Programs developed and implemented to fulfill these functions, by the communities, the counties or the states, have generally enjoyed comparable and consistent public support, although the planning, the organizational level of such planning and the population of specialists involved in the subsequent coordinated effort are unique to the disaster type.

Extending far beyond individual, local or state capabilities, the magnified responsibilities involved in protecting the American people and property, under the threat of a nuclear attack, are inherently nationwide in scope, specifically delegated to the Federal Emergency Management Agency. The decisions made and policies developed at this level, however, must be compatible with public sentiment if they are to be implemented effectively, as the behavioral manifestations of public opinion could impede rather than facilitate policy, regardless of its inherent value. Though originating from a small but vocal group, arguments launched against civil defense measures as they relate to the threat of nuclear attack are represented as reflecting the attitudes of the American public.

The primary objective of this paper is to provide

empirically based insight into these prevailing patterns of national sentiment as they relate to the uniquely complex issues addressed in planning and preparing for a possible nuclear confrontation, as well as some issues relevant to emergencies in general. Some frequently cited issues surrounded by controversy are whether a nuclear attack is a realistic concern, whether anything can be done about it at all and if so, whether it would be worth doing, whether the public would be willing to finance such action and whether such action would in some way increase the probability of a nuclear conflict. Our findings, generally, dispute the arguments commonly presented against the civil defense community's current efforts and future intentions.

The data on which this report is based was collected with a national telephone survey conducted in May and June of 1987 by The University of Pittsburgh's Center for Social and Urban Research. The sample of households was randomly selected in 48 contiguous states culminating in 1595 completed interviews with respondents 18 years of age or older. This initial report discusses findings on the sample as a whole, until such time as further analysis of subgroup comparisons and variable relationships can be completed.

The first issue addressed in the survey involves the public's perception of the objectives or goals of civil defense. The findings suggest that the public understands civil defense in general terms as an effort to be prepared to help and protect the population threatened by possible hazards. The broad applicability of these expectations would appear to support the concept of a comprehensive emergency management system. Specifically, the goals cited as most important were: a) the capability to warn people of impending danger, and b) providing information so people can help themselves.

Focusing attention on the possibility of a nuclear war, respondents were asked to estimate the likelihood of a nuclear conflict occurring. The percentage of respondents believing that a nuclear attack is likely or very likely increased from a 1978 survey (28.7%) to this 1987 survey (39.1%). The calculated likelihood index values derived from 6 surveys, over a 24 year period, have remained relatively stable, ranging from .415 to .469. Not only do many Americans accept the possibility of a nuclear war, but 71.7% of our 1987 respondents believed themselves to be living in a medium to high risk target area, resulting in a likelihood index of .717 compared to .647 in 1978.

Substantiating this trend in risk perception, most respondents, in this and previous surveys, do not expect more than a few hours warning time, with the largest cohort in 1987 (38%) expecting no warning time at all compared to 19.6% in 1978. In 1978, 20.7% of the respondents felt there would be more than 3 days warning while only 1.9% of the 1987

respondents were so optimistic. A majority of respondents (57.4%) did not believe there would be enough time to evacuate even though 43.6% believed it could be accomplished in 12 hours or less. The expected source of an initial warning was overwhelmingly television and radio during daylight hours. Although 30% of the respondents indicated that some household member was awake part of the night, 92.8% expected their personal social network to be the primary warning source during that time period, rather than the media. Overall, respondents expected that 75% of their community would attempt to warn friends, relatives and neighbors of any danger. Sirens and bells were credited by few respondents as initial warning sources.

Given the public perception of the risk of a nuclear attack, expectations about survivability were questioned under several conditions: current day conditions, in fallout shelters, in blast shelters, if evacuated and if evacuated to fallout shelters. Respondents expressed the expectation that given the best conditions, with the implementation of the most extensive protective program options available, only about 50% (survivability index of .578) of the population would survive and that without those programs, only 27% (.274) of the population would survive. Each protective option was perceived as progressively enhancing the survivability index by an average factor of 1.86. Although this information may appear, initially, to represent a bleak public outlook, 76.2% of the respondents agreed that civil defense measures "do save many lives" and 80.0% disagreed with the argument that "no civil defense program makes sense because it would not be able to save enough lives." The data illustrates, not only a public awareness of the consequences of war and the anticipation of improved survivability when civil defense measures are taken, but the value placed on life saving, no matter how imperfect, as the most important function of civil defense programs. A majority of Americans (63%) believe the nation could be rebuilt after a nuclear attack.

The issue of general support for civil defense programs was broached again by asking the respondents to agree or disagree with a list of common arguments. Consistent with previous answers, 91.1% of our sample disagreed with the idea that our enemies would not dare attack and so there was no need for civil defense; 84% did not accept the argument that civil defense programs could provoke a nuclear war, through American complacency or enemy interpretation, nor that such programs would undermine arms control agreements. About half the population believe civil defense programs will contribute to deterrence.

The extent to which people believe preparedness for peacetime threats, natural or technological, will benefit or advance preparedness for a nuclear attack, and conversely, to what extent preparedness for a nuclear war will contribute to

the effectiveness of coping with peacetime disasters was explored. The data obtained clearly indicates that Americans believe there to be a mutually beneficial interaction between the two types of preparedness, although a slightly higher percentage of respondents (82%) perceive preparedness for nuclear war to have a beneficial impact on peacetime preparedness capabilities compared to the percentage (67%) supporting the reverse proposition. This finding also confirms support for comprehensive emergency managements systems and may be a contributing factor to many of the findings reported here.

Further civil defense support was indicated in the assessment of the public's willingness to pay for such programs. An increase in spending, over the \$.56 per person currently spent, was supported, by 33.9% of the respondents in reference to preparedness programs and by 67.5% of the respondents in reference to "protecting people from nuclear war". In addition, 46.1% of our sample supported the reallocation of existing revenue to enhance civil defense funding.

Public perspectives on various debated strategic alternatives are assessed and reported. Neither arms control agreements nor active defense measures (ABM or SDI) are accepted as substitutes for passive civil defense programs, rather the value of a mixture of "damage limiting" defense measures is supported. Over 50% of the population not only rejects unilateral U.S. arms limitations, but rejects the need to maintain U.S. superiority in an arms agreement. An equitable arms agreement appears to be accepted as credible by the public and is, in fact, offered as the most preferred mode of reducing the danger of war. The public (87.4%) believes no one can "win" a nuclear war. Again a complementary mixture of defense measures is supported with passive civil defense programs viewed as slightly preferable to active defense alternatives (SDI and ABM). The prospect of deployment of nuclear weapons is acceptable by most Americans only if the U.S. is attacked first (87.4% support), however, yielding to nuclear blackmail is not supported.

In addition to the public's expectations relating to government action, individual intentions and variables influencing those intentions are evaluated. 1987 data indicates slight increases, over our 1978 survey data, in the public's intentions to evacuate their homes if a nuclear confrontation threatens, both spontaneously (58.5%) and if a recommendation were to be issued by the President (73.1%). Consistent with this, most Americans (73.7%) can conceive of a situation in which the President would urge evacuation. As would be expected, in light of this expectation, support for the development of a national evacuation plan has been consistently high, 78.2% of the respondents in 1978 and 76.7% in this 1987 survey. Because the public does not predict sufficient evacuation time generally, it is assumed that a

Presidential directive would be predicated on early indications of danger and would presuppose sufficient evacuation time.

The possibility of neighbors influencing the enactment of stated intentions (the "contagion" effect) was supported, to some extent, by the data. It was found that people would be more likely to evacuate if they saw their neighbors leaving and, to a lesser extent, would be less likely to leave if their neighbors were staying.

Several questions on public sentiment in relation to natural and technological disasters are also explored. Over 1 in 4 of the respondents had experienced a disaster of some kind, the majority having experienced a tornado. In addition, 6.6% of the respondents had evacuated their homes at least once and 7.9% had sheltered evacuees. Respondents clearly indicate the perception that some major catastrophe could occur in their community in the next 5 years, although the response patterns reflect different risk levels dependent on location of residence. Tornadoes (.513 likelihood index value) and spillage of toxics (.448 likelihood index) were considered the most likely emergencies to threaten.

The perceptions of risk, for one's community and for the nation, from peacetime nuclear energy sources such as a major nuclear power plant accident, an accident involving nuclear waste, a terrorist takeover of a nuclear facility or a terrorist nuclear threat to a city or community were also explored. The likelihood estimates of a major nuclear plant accident occurring near the respondents' homes were relatively low (.372), while the estimates for the nation as a whole were high (.599), even higher than in 1978 (.470). Of our sample, 32% claimed to live within 50 miles of a nuclear power plant. The likelihood estimates of a nuclear waste accident were the highest, given a likelihood index of .606. The scenario of a terrorist taking a community hostage elicited a .456 likelihood index value, while a terrorist takeover of a nuclear facility produced a .382 likelihood index value.

A significant majority of the respondents (58.2%) do not support the construction of new nuclear power plants, particularly if the site of construction is within 50 miles of the respondent's residence (69.9%). There is less resistance (35.7% oppose) to the continued operation of existing nuclear power plants.

As would be expected, the public delegates the key role, though not entire role, of planning and preparing for a nuclear war to the Federal Government. The data, however, clearly indicates support for some combination of effort in dealing with all the hazards presented, including the threat of a nuclear attack, with 22% of the respondents mentioning community volunteers and the private sector as partially responsible. This cooperative effort view explains the

emphasis on providing the public with needed information to help themselves in an emergency as a major goal of civil defense. It is reflected, as well, in reported and anticipated behavior related to home basement sharing, willingness to acquire or extend emergency training and in volunteering behavior. Responsibility for technological hazards is also assigned primarily to the Federal Government, with State Government and the private sector holding secondary roles. In contrast, the responsibility of coping with natural disasters is expected to be shared almost evenly by local, State and Federal Governments, as well as community volunteers.

The existing altruistic tendencies as well as the willingness and desire to become involved in vital ways was illustrated in a number of diverse inquiries. Significant support was demonstrated for a national program to use home basements as fallout shelters for families as well as for others. Of the 47% survey respondents owning a basement, 71.8% indicated a willingness to share their basement with others. Almost all of the respondents (91.3%) voiced the expectation that their communities would be helpful to evacuees if they were to become a host community. Under this general emergency condition, 90.7% of the respondents expressed willingness to provide housing in their own home. A significant proportion of our sample reported some emergency training, particularly first aid training (59.4%) and CPR (45.8%). Almost 80% of the respondents indicated a willingness to update their current training or to acquire training. The need to promote training and educational opportunities is clear. Although 4 in 10 respondents had heard of "nuclear winter", the informational level relevant to the idea is low. Over a third of the respondents had participated in some volunteer activity in the past year and 75.7% indicated a willingness to volunteer for emergency and disaster related activities if the need arose. It appears that recruitment would not be a concern during a crisis, but investment in the future efficient, well prepared utilization of this resource should be considered.

Finally, the public's perception of the effectiveness with which responsibilities are implemented was assessed. The evaluation of emergency management capabilities at the community level is somewhat more positive (.546 effectiveness index) than the evaluation of Federal Government's efforts (.476 effectiveness index). Despite an unimpressive evaluation of the implementation, our data clearly reflects the public's support for civil defense programs in general, and their desire to contribute to specific emergency management efforts, whether in the form of community self help groups or on an individual basis, whether in preparation for nuclear attack, technological hazards or natural disasters.

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS None	
2a. SECURITY CLASSIFICATION AUTHORITY None			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release: Distribution unlimited	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE None				
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION University Center for Social and Urban Research University of Pittsburgh		6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION FEMA	
6c. ADDRESS (City, State, and ZIP Code) University Center for Social and Urban Research 1706 Cathedral of Learning University of Pittsburgh, Pgh., Pa 15260			7b. ADDRESS (City, State, and ZIP Code) Washington, D.C. 20472	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION FEMA		8b. OFFICE SYMBOL (If applicable) SL-CD-MP	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER EMW-K-1024	
8c. ADDRESS (City, State, and ZIP Code) Washington, D.C. 20472			10. SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO.	PROJECT NO.
			TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) Some Issues In Emergency Management-Public Views in 1987-				
12. PERSONAL AUTHOR(S) Jiri Nehnevajsa				
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM Aug. 87 TO Dec. 87	14. DATE OF REPORT (Year, Month, Day) December 1987	15. PAGE COUNT 161	
16. SUPPLEMENTARY NOTATION <i>Fr. back</i>				
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	Civil Defense, Nuclear War, Evacuation, Volunteering, Emergency preparedness, Nuclear Energy, Risk, Emergency Management, Disaster. (SD)	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report presents an overview of findings, derived from a 1987 national telephone survey, on current public sentiment as it relates to numerous crucial civil defense issues and concerns. A primary objective is to provide empirically based insight into some of the common arguments, presented as reflecting public attitudes and perceptions, that must be evaluated as decisions on complex national policy alternatives are weighed. Emergency planning and preparedness measures, in place or considered for future implementation, that address the threat of national disasters, technological hazards, and particularly those relevant to the threat of a nuclear confrontation are explored. The public's perception of what the principle goals of civil defense should be is questioned. Their acceptance of a nuclear attack as a credible threat is assessed, as well as their estimates of probable survival rates under a variety of passive defense conditions. The perceived viability and value of alternative civil defense measures and the public's expectations regarding governmental responsibility for implementing				
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION	
22a. NAME OF RESPONSIBLE INDIVIDUAL Ralph Swisher			22b. TELEPHONE (Include Area Code) (202) 646-3561	22c. OFFICE SYMBOL SL-CD-MP

such measures are explored. Willingness to finance such measures or to reallocate existing funds to civil defense efforts is reported as another indication of support. The acceptability of crisis relocation is evaluated through inquiries into the public's support for the development of a national relocation plan, their intentions to evacuate when threatened, either spontaneously or in compliance to a Presidential directive and their expectations of such a directive becoming a reality. The expected influence of the actions taken by neighbors is assessed. The amount of warning time expected in the event of an attack and the public's estimation of the time required to evacuate are compared. Expected initial warning sources, during the day and at night, are provided. The public's attitude toward, and priority given to numerous strategic alternatives as well as national policy alternatives are documented. Respondents are given an opportunity to accept or reject arguments that civil defense measures influence individual attitudes towards war, promoting complacency in this country, and increase the probability of a conflict by antagonizing our enemies.

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Although the survey focused heavily on national security concerns, issues relevant to peacetime hazards or emergency management in general were also addressed. The extent to which people believe preparedness for nuclear war and preparedness natural or technological hazards are mutually beneficial is explored. The public's expectations of experiencing a natural or technological disaster are outlined, as well as the degree of risk assigned to a variety of different threats, particularly those associated with nuclear power. The willingness of the public to share the responsibility of dealing with an emergency, either through volunteer work, home basement sharing or by participating in the planning and preparation necessary, is reviewed. An assessment is made of the training already acquired by the respondents, as well as their willingness to update or obtain emergency relevant training in the future. The data provides evidence of, not only the strong altruistic and cooperative tendencies of the American public, but also the strong public support, generally, for civil defense programs.

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DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
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I. INTRODUCTION

For most people most of the time life unfolds under conditions of relative normalcy. This simply means that today is much like yesterday and tomorrow can be expected to be very much like today. The basic flows of actions are patterned and remain quite applicable when there are no dramatic changes which would necessitate changes in behavior. Beliefs and attitudes, too, are marked by fundamental stabilities as long as no major changes suggest or force their rethinking and reconsideration.

Yet, of course, at any given time the experiences of some people are marked by death of some loved one; by illness or injury to the individual or a loved one. At any given time fires break out in individual homes, in industrial facilities, in business and commercial enterprises. And, indeed, at any particular moment of time some people fall victim to crime against themselves or someone they care about, or against their property. Needless to say, these are the kinds of crisis events which disrupt significantly the more routine flows of normalcy; they are both unexpected and unwanted.

Across the trajectory of life everyone encounters the death of loved ones; and just about everyone comes to experience illness or injury - one's own or of someone close. These, too, are the kinds of events which alter the conditions of "normalcy", temporarily if not permanently, and necessitate actions of coping - that is, adapting to the consequential change in circumstances. They are the types of events which call for some adaptation in ways of thinking - in beliefs and attitudes.

Many people take some actions in seeking to avoid such undesired experiences. These are, in effect, anticipatory measures undertaken under conditions of normalcy in recognition of the possibility that an emergency could come about quite unexpectedly and, essentially, at any time. People look around to check on oncoming traffic before crossing a road, or cross on "green light" rather than on "red", and see to it that youngsters not yet fully comprehending the lore of traffic are helped by others in crossing streets. For the most part, people drive themselves with some care and certainly with no intention of causing or becoming involved in an "accident" (which is, for the most part, but a kind of euphemism for some human rather than equipment failure..). People exercise and diet in the hope that they will maintain "good health." Many go for a regular check-up with a physician to forestall some unexpected breakdown of the organism or, at least, to be warned of it on a timely basis. Matches and poisons and sharp instruments are (perhaps not often enough) kept out of the reach of children. And so it goes. Pages and pages could be filled with the many

different "small actions" whereby people seek to prevent emergencies.

Actions of these kinds are "prudent": that is to say, they represent anticipatory responses which stand a reasonable chance, in light of existing experience, to prevent some hazard from actualizing. But no such actions can be considered foolproof. They provide no guarantee that emergencies will be forever avoided, but they do significantly decrease the probabilities of the unwanted and even feared occurrences.

And there are, of course, also actions which do not aim at preventing an emergency but are oriented toward becoming warned of an impending threat: smoke detectors are certainly a good example; thermometers help to provide an early warning of a change in bodily temperature which, in turn, generally signals that something else is wrong; burglar alarms serve to deter burglars but also to warn neighbors and residents that some untoward activity might be in progress.

Still other measures involve efforts at minimizing the impact of an actualized emergency. Fire drills in schools or office buildings serve such purposes. First aid training certainly represents an acquisition of (at least minimal) knowledge and skills which one hopes never to have to put to actual use. Fire extinguishers neither prevent fires nor warn of an impending one, but their rapid availability can obviously make a major difference when a fire breaks out - provided one knows or can very quickly learn how to use them.

Finally, there are steps which most people take in some form to minimize the consequences of an emergency. Various forms of "insurance" are the prime example of anticipatory responses which do not prevent an emergency, provide timely warning, or minimize its impact but which do help to decrease the post-emergency effects - at least those that are translatable into dollars and cents.

However, once such measures have been taken and they are in place, by far most people do not pay much attention to possible hazards as long as conditions remain relatively normal. Thus people do not really expect to become ill or injured tomorrow or the next day, though they might. People do not anticipate to be victimized by crime or fire in the next few hours or in the next few days, though this could happen. And so concerns with possible crises, ruminations or discussions as to what one would do were a crisis to take place, a motivation to learn and keep learning about how to respond to an emergency, are simply not items on the daily or even sporadic agenda of most people in normal environments. After all, just the very routines - and slight deviations from routines - during normalcy, take up whatever time there is, and

an emergency is nothing one likes to contemplate, to keep constantly vigilant about or even to plan for (save for such in-place measures that may have been already taken and which, by their very existence, provide some heightened sense of being secure).

There is more to all this, however. In every society some patterns of activities delineate social roles of specialists on emergencies. They are the people who are expected to be educated and trained to help in preventing emergencies and in their mitigation. In a profound sense, society delegates key responsibilities for emergency management to such role players and this, too, has the effect that almost all other people in a society "need not" and do not concern themselves with emergencies under normalcy conditions.

When a fire breaks out, one calls the fire department and the firemen are expected to handle the problem. A victim of a crime tends to call the police department to seek remedy. Illness or injury leads one to call a physician, an ambulance, a hospital, a clinic. "Firemen," "policemen," "physicians," "nurses," "paramedics" are among the most obvious examples of emergency specialists. They all are fully expected to know what to do, and actually to do it as well as to be the prime resource for providing information to the victim of an emergency concerning how to act and what to do to decrease the prospects of another future emergency.

If problems in dealing with emergencies which affect individual households and specific industrial, business and commercial enterprises are vexing enough, the difficulties associated with hazards which impact many people at the same time are much more complex. These are the natural and technological disasters and emergencies in which some significant segments of the public are the victims.

Precisely because these types of events, potentially and actually, impact whole areas and thus many people, there seems to exist less of an incentive to take anticipatory measures to reduce possible effects and more of an incentive to expect disaster and emergency specialists to cope. This, too, is reenforced by the simple observation that no individual can take measures which would help in preventing natural or technological disasters and all efforts at prevention or risk minimization are necessarily vested in social organizations.

Thus no "private" warning systems exist or can exist: no burglar alarms or smoke detectors or physician check-ups. Public agencies are therefore "delegated" the responsibility for monitoring potential dangers, for warning the public, for providing helpful information as to what actions to take in the face of a danger and during a disaster period, as well as

thereafter, and also to be responsible for plans and procedures to minimize impacts and malignant consequences and to speed up such recovery processes as are necessary to restore a semblance of normalcy as fast as possible.

For such emergency management organizations as come to be set up, natural disasters and technological emergencies also present altogether different problems from those which involve dealing with a particular crime, death, injury, disease or fire. Disasters which affect the public generally require the involvement of a variety of emergency specialists - not merely fire fighters or police officers or nurses and physicians but, in effect, all of them as well as many others. Coordination of activities among otherwise independent and highly specialized organizations and agencies becomes itself a key issue. In good measure, the quality of such coordination is related to the extent to which mitigation as well as recovery measures prove effective and how effective they are.

Furthermore, it cannot be expected that the most effective steps would be taken by emergency organizations, each by itself or even in the necessary collaborative effort, if decisions as to action courses were solely driven by the evolving circumstances. Thus there is a need, if not actually a requirement, for ex ante planning. Of course, one need not expect that paper plans, or even their exercise under simulated conditions, will be exactly like an actual situation. For the most part plans cannot be carried out exactly as one may hope, and even if carried out, they do not work exactly as expected. A concrete circumstance always necessitates a great deal of improvisation and spontaneity if only due to the fact that no plans can be devised to be fully responsive to the actual, time and circumstance defined, disaster processes. But good plans reduce the uncertainties significantly enough in that at least not all decisions have to be rendered at the spur of the moment, but rather, those decisions which have to be made can be "anchored in" or "patterned" relative to existing plans. In that sense, the circumstance-driven choices (since each actual situation is, in many subtle ways, a unique one) represent adaptations of planned action courses to specific realities.

Without doubt, the possibility of a nuclear war establishes a kind of ultimate hazard for society. Natural and technological hazards are, in effect, relatively localized phenomena even though they might impact large areas of the country. There is, nonetheless, always some "hinterland" the human, material and fiscal resources of which can be utilized in the rescue and recovery phases of a disaster. This, of course, is not the case when it comes to a possible nuclear conflict unless one were to stipulate as dominant a scenario in which the likely adversary attacks only a very few targets in the hope of convincing the nation to sue for peace.

On any reasonable scale in terms of which one might wish to express the plausible magnitudes of "insults" due to natural or technological hazards (and thus the damage to life, health, property and environment which may result), a nuclear war as a potential danger would tend to be placed way beyond whatever limit of such a scale. It is, indeed, in this sense that the term "ultimate" disaster has been used.

If community, countywide or even statewide coordination of activities of various emergency management organizations is necessary to deal with most natural and technological hazards, the nationwide nature of a possible nuclear conflict requires such coordination on a nationwide basis. And, of course, the responsibilities for national defense are constitutionally among the central responsibilities of the Federal Government.

In the absence of a national commitment to help protect the people against a possible nuclear war hazard, it is but illusory to expect that individuals or individual municipalities, counties or states would either have the will, the incentive, the resources or the capabilities to "defend" the nation on their own.

There exists a national commitment - of sorts. It is represented by the Civil Defense Act passed by the Congress in the days of the Presidency of Harry S. Truman. Despite many amendments to the Act thereafter and many organizational changes, the Congress has never rescinded or modified a central provision of that Act: that its purpose was to set up a "Civil Defense organization" with the mandate to develop ways to help "protect the people and property against the hazard of nuclear war".

It is not the objective of this discussion to undertake a careful appraisal of the history of these "civil defense" efforts. Suffice it to say, that the responsibilities have been passed on to the Federal Emergency Management Agency, established in the waning period of the Carter Presidency as the organization to help manage, and deal with, all kinds of natural and technological hazards. Suffice it to say, that in the absence of clear and consistent Presidential urgings and Congressional mandates (across the span of decades since 1950) the central task of "protecting people and property" against the danger of a possible nuclear conflict has remained on a very low burner of national priorities. Suffice it to say, that in the absence of relative Federal emphasis, it cannot be surprising that states, counties and municipalities focus, as they almost have to, their preparedness and planning efforts predominantly on dangers of natural and technological hazards which, realistically, they are more likely to face.

Programs to help deal with natural and technological disasters have never been controversial: there is certainly hardly anyone that would be "against" research, development and activities that might prevent earthquakes or hurricanes or explosions or toxic spillages. There may be some arguments concerning costs - and thus cost-effectiveness of this or that approach. But in principle, there are no issues around which a national dialogue would result. In the same sense, there are no issues about the need for fire departments or police departments, hospitals and clinics, weather forecasting services and the like.

But, of course, the issue of "protecting people against the hazards of nuclear war" is of quite a different nature. From the very beginning, it has been shrouded in one controversy after another: whether anything can be done at all; whether anything that might be doable would be worth doing; whether anything worth doing would be worth the cost; whether such measures as might be otherwise worthwhile would not actually bring the nation closer to the dreaded nuclear war or even precipitate it. And so on.

It is for these reasons that the study, the basic results of which are reported here, focuses on issues connected with the "unthinkable-but-thinkable" nuclear war. And it is also due to the fact that programs to cope with the ultimate disaster, if carried out and if at least partially effective, would make dealing with the less dramatic and more localized natural and technological hazards much easier. It is, indeed, an arguable principle that if one can deal with an extreme situation, all other less extreme circumstances tend to be easier to handle.

Fortunately, the nation and the world have been spared a nuclear conflict between the superpowers thus far. Fortunately, one would have to argue that the probabilities of such a conflict are low, perhaps even negligible as it seems as of now. But since the possible consequences of this very low probability event are so vast in their malignancy, the "disutility" (the product of probability and consequences) remains immense and the risk cannot be comfortably ignored. The inquiry reported here then cannot address "experiences" or the facts associated with actions since there are no such experiences. But it deals with attitudes and sentiments of the American body politic: views regarding the "ultimate" disaster and the implications of such perspectives for "civil defense" programs.

It would be a mistake to consider the expressions of attitudes and viewpoints as somehow representing the nation's demands or mandates, one way or another. Only votes can accomplish that and voting decisions result from a prolonged national dialogue which forms views, crystallizes positions

that already exist, reenforces as well as changes ideas which people have. An inquiry into national perspectives, as of a given time, is just that: it helps in understanding the dispositions of the nation's public and establishes the kind of broad riverbed of credible and acceptable approaches to this or that problem.

An understanding of sentiments and predilections of the nation provides yet another input into the ways in which policy makers eventually arrive at choices among the most complex alternatives which they have to contend with. It is in a democratic society, in some sense, an essential input and not simply a marginal one, though it does not - nor should it - dictate policy which must involve many other salient considerations, be they technological, economic, political, legal, moral and religious or whatever. It is good to hear what the nation has to say - and this is true whether the things one hears are what one would like to find or what one would prefer to ignore.

II. THE STUDY

The survey on which this report is based was carried out by the University Center for Social and Urban Research, University of Pittsburgh, in May and June, 1987. The national household sample included respondents 18 years of age and older in the 48 contiguous states of the Union.¹

Interviews were conducted by phone. By definition, then, the sample excludes households without telephone service, a small percentage. The telephone numbers were acquired from Survey Sampling Inc., Fairfield, Connecticut. Since the basic approach to phone sample selection in this instance involves random digit dialing, unlisted numbers are also included.²

As is customary, each respondent was told that the phone number was selected randomly and thus the household "happened" to fall into the sample. The respondents were also assured of complete confidentiality and informed that while cooperation would be greatly appreciated, it was strictly voluntary.

The survey instrument was divided into two parts due to its overall length. On completion of the first part of the interview, the respondent was informed that there were a few more questions and asked whether the interview could continue, or be resumed at some later convenient time.

In all, the survey ended up with 1,595 interviews. Of these, 12.4 percent ($N = 197$) completed only the first, longer, part of the interview. With confidence level of .95, when the results are reported in percentages, the margin of sampling error is less than 3 percent.

This report provides a basic "guide" to the data: that is, to findings as they pertain to the sample as a whole. The similarities and differences for various relevant sample subgroups or segments are not, in this first report, considered. Nor are relationships between and among the variables analyzed, a matter which must also await subsequent reporting.

¹ The questionnaire is provided as Appendix A.

² Appendix B contains information on the sampling technique. The sample of nation-wide phone numbers was acquired from Survey Sampling Incorporated.

P A R T I.
ISSUES OF NATIONAL SECURITY

III. GOALS OF CIVIL DEFENSE

Asked in an open-ended probe about what "civil defense" meant to them, some 17 percent of the respondents did not venture an opinion. Another 1.1 percent said that they had never given it a thought, and 0.4 percent simply said that "it", civil defense, simply "does not exist". Furthermore, 3.4 percent assert that "civil defense" means "very little" to them.

BOX 1. A NOTE ON INTERVIEWING

While true to an extent about all forms of interviewing, it is particularly important to note that telephone interviews place a kind of premium on ability to articulate as well as on ability to respond very quickly. Thus quite a few of the manifest "don't know" responses, to this as well as to some of the other questions, would generally disappear had the respondent sufficient time to contemplate, even if briefly, what to say. In face-to-face interviews this is somewhat more possible than in phone interviews, but even so the "problem" with open-ended probes remains.

Also, among those who do respond rapidly and do articulate their view, it is quite naturally the very first thing that comes to their mind which gets reflected in the response. This may well seem like an advantage - and more psychoanalytically oriented researchers would tend to make the claim - since it appears to reveal what is "topmost" on the respondent's mind. Yet, some caution in interpreting is well advised: the rapid and spontaneous wording has often a way of being superficial and certainly cannot be construed as being grounded in a thoughtful assessment.

What then comes to mind among those (83 percent) of respondents who did answer?

- 12.6 percent refer to "preparedness" in general terms
- 11.3 percent mention that civil defense is to provide help in the event of disastrous occurrences
- 10.9 percent speak of "protection", especially of people
- 5.4 percent think in terms of a Governmental agency for emergency management (though FEMA as such does not necessarily get mentioned by name), another 3.0 percent

specifically mention "the military", and 4.4 percent use the term "defense" in this connection.

- 5.2 percent define civil defense as "the community helping itself" and 3.0 percent view it as people "depending on themselves"; 3.4 percent mention citizen volunteers.

Only 2.1 percent of the respondents single out "protection against attack" as such.

Thus "civil defense" is seen in quite general terms as efforts at being prepared in the face of possible hazards, in providing help when needed, and in protecting the population. While these key answers may well have to do with measures in face of a nuclear threat as well as against peacetime hazards of all kinds, the data do not make the differentiation possible.

BOX 2. ON PROBES WITHIN PROBES

There is no inherent weakness in the method of data acquisition. It would certainly be possible to determine, by further probing questions, what the respondents are thinking about when they speak of "preparedness" or "help" or "protection of people". But to pursue the issues at these further levels of detail would have to occur at the cost of not being able to ask many other important questions: after all, there is a limit to the length of time one can expect respondents to cooperate in a phone interview no matter how important or interesting the topic.

Another view of the national perceptions of civil defense is provided by a subsequent question which asked the respondents to evaluate the relative importance of several stated (plausible and not mutually contradictory) objectives. The results are summarized in Table 1.

Table 1.

IMPORTANCE INDICES OF CIVIL DEFENSE GOALS

<u>Goal Statement</u>	<u>Index</u>
Warning the public of impending danger	93.9
Providing information so people can help themselves respond to emergencies	93.0
Providing assistance to communities hit by disaster(s)	92.2
Providing protection in case of natural disasters	89.6
Providing protection in case of technological hazards	88.6
Providing protection in case of nuclear war	85.8
Evaluating community disaster plans	84.8
Providing protection in case of conventional war	85.0
Contributing to the prevention of nuclear war	79.0

Note: If all respondents had identified a given objective as "extremely important", the index would be 100. The response scale was from 0 (extremely unimportant) to 5 (extremely important). The reader interested in the original averages simply has to divide the index value by 5 to obtain the nonstandardized response. Obviously, if all respondents used the zero (0) scale value and thus said that a particular objective was altogether unimportant, the index value would be 0 and it would be, as previously indicated, 100 if all were to have agreed that the objective merited a "5" (extremely important) rating.

Some conclusions seem obvious:

1. All of these stated objectives of the civil defense program are considered very important indeed.

2. It is highly pertinent to note that the two most important goals have to do with (a) capability to warn people of impending danger and (b) providing information so that people can act on it in a self-help type of mode.
3. Similarly, it is relevant to point out that the "least importance", though relative to the overall high ratings, gets attached to the deterrent possibilities of civil defense programs - that is, to its "contribution to preventing nuclear war".

IV. THE DANGER OF WAR

Likelihood of war

A nuclear conflict between the United States and the Soviet Union continues to be seen as quite possible. In effect, as the data of Table 2 show, the overall likelihood estimate tends to hover around 50-50 chances, though it is somewhat lower than that. And the 1987 index yields a value just about exactly that of the late 1978 assessments.

Table 2.

LIKELIHOOD OF NUCLEAR WAR

<u>Year of Study</u>	<u>Likelihood Index</u>
1963	.456
1964	.423
1966	.432
1972	.415
1978	.469
1987	.468

Note: A scale from 0 to 10 was used in 1963, 1964 and 1966 surveys. For the subsequent years, the index results from assigning values of 1, .75, .5, .25 and 0 to "very likely", "likely", "50-50", "unlikely" and "very unlikely" responses respectively.

Over nearly a quarter of a century, the data, in these averaging terms, show rather remarkable stability. Nuclear war has certainly been viewed as a possibility across this span of 24 years and its likelihood, in the views of the respondents, has neither dramatically declined nor increased.

In the 1978 (face-to-face) survey, 28.7 percent of the respondents fell into the "likely" or "very likely" categories of response; in 1987, the percentage is 39.1 percent - an apparent major increase. In the "unlikely" or "very unlikely" response bracket, there were 36.8 percent of the 1978 respondents, while the percentage was 53.6 percent in 1987 - also an apparent major increase.

Does this mean that the views of Americans, while on the average yielding the same likelihood index value, have become more polarized or crystallized? It is, of course, not impossible to arrive at such a conclusion, but a simpler (and almost certainly more valid) explanation is provided in Box 3 below.

BOX 3. ON WAR LIKELIHOOD RESPONSES.

The mode of questioning appears to be the main reason for the differences between the 1978 and 1987 percentages. In the phone interviews of the 1987 inquiry, the respondents were given but "likely" or "unlikely" options explicitly, and other responses ("very likely", "very unlikely", "never will happen", or "about 50-50" or equivalent answers) were entered only when mentioned by the respondents themselves.

By contrast, in the 1978 survey, the respondents were provided with a card including all of the scale responses and only the "never will happen" type of answer was recorded if spontaneously mentioned by the respondents.

The overall effect was that the "50-50" category (29.9 percent in 1978) "forced" in the 1987 study shifts into the "likely" or "unlikely" pattern, and that the "very unlikely" or "very likely" answers also tended to become much less pronounced in 1987.

This suggests that in 1978, given the "50-50" likelihood response opportunity, some people may have availed itself of it even if they may have been slightly leaning either toward the "likely" or "unlikely" answer. Alternatively, this may also mean that the 1987 respondents, not being actually exposed to options other than "likely" or "unlikely" in any explicit manner, found themselves "forced" into one or the other category even if they would have preferred the "50-50" response had it been made explicitly possible.

However one may wish to interpret the basic data, one conclusion is, perhaps, most important: a nuclear war is not seen as an impossibility; the danger remains perceived as a real one.

Target Danger

In all, 71.7 percent of the respondents see themselves as living in areas of "medium" or "high" likelihood of being targeted should nuclear war ever occur.

Table 3.

TARGET DANGER PERCEPTIONS

<u>Threat Level</u>	<u>Percent</u>
High danger	45.8
Medium danger	25.9
Low danger	22.6
No danger at all	4.1
"DK", "No answer"	1.6

If the data are transformed into a simple "likelihood of being targeted index", the 1978 study revealed an index value of .647; the 1987 inquiry shows a value of .717.

Those who thought the risk that their area would be a target was "medium" or "high" were further asked:

"What in your area makes it a target?"

Table 4

PERCEIVED REASONS FOR BEING TARGETED

<u>Reason</u>	<u>Percent</u>
Military targets	33.2
(Military base)	(29.6)
(Arsenal)	(3.6)
Metropolitan area	31.2
Industry	24.0
(Industry in general)	(17.3)
(Defense contractors)	(3.1)
(Chemical industry)	(1.8)
(High technology)	(1.1)
(Research facilities)	(0.7)
Utilities	15.4
(Nuclear power plants)	(13.2)
(Utilities, power plants)	(2.2)
Transportation center	10.2

Note: Percentages based on those, 71.7 percent of the sample, who claimed to live in "medium" or "high" target danger areas.

Percentages do not add up to 100: some respondents gave more than one reason (none gave more than two).

It certainly need not be assumed that respondents who mentioned "metropolitan area" as a sufficient factor in considering themselves residing in a probable target area somehow refer to "population-centered" attacks as such. Past surveys strongly suggest that further probing, had it been carried out, would indicate that the "metropolitan area" response is but a shorthand for more specific rationale: industrial centers, transportation and communications hubs, and the like. In any event, the pattern of responses is clearly not unrealistic though only further analysis can disclose how the pattern maps onto assumptions of such documents as TR-82 or NAPB-1990 (FEMA, 1987) which provide national, and more hard-data based, assessments of the likely distribution of targets under massive attack conditions. In fact, when the NAPB-90 data are taken into account:

- 62.4 percent of the 1987 study respondents reside in areas designated (NAPB-90) as "very high" risk areas,

- 4.4 percent live in "high" risk areas,
- 7.2 percent are in "medium" risk areas, and
- 26.0 percent have their homes in areas which NAPB-90 identifies as being at "low" risk.

V. ON WARNING

Warning Time

As in all prior studies, the respondents of the 1987 inquiry do not expect much in the way of a warning time should nuclear war come about.

Table 5.

EXPECTED WARNING TIME

<u>Warning Time</u>	<u>Percent</u>
No time	38.0
Minutes (15-30 or thereabouts)	27.8
Some hours	16.1
About a day	2.4
Two to three days	1.6
More than three days	1.9
"DK", "No answer"	12.2

The 1978 data show a somewhat different pattern though they, too, suggest that national thinking in terms of nuclear war onset warning remains basically focused on tactical warning. To put it another way: people still seem convinced that an attack might well come essentially "out-of-the-blue" in a sudden spasm.

In 1978, some 19.6 percent referred to "no warning time at all", 11.7 percent mentioned something of the order of 15-30 minutes, another 15.2 percent thought in terms of hours, 5.7 percent cited "about a day" and 10.2 percent and 20.7 percent responded in terms of two/three days or more than three days respectively. Others (16.9 percent) did not know or did not choose to respond to the question (actually, 16.7 percent said that they did not know).

But there is a difference in the format of the question and this alone is likely to account for the different 1987 and 1978 distributions. In 1978, the question was:

"In your judgment, how much time would there be between your becoming pretty certain that a nuclear war is coming and the beginning of the war itself?"

The 1987 question was, in turn:

"In your judgment, how much warning time would there be if a nuclear war were to occur?"

BOX 4. ON WARNING TIME PERCEPTION

There is another important difference between the 1978 and 1987 study in this regard. The 1978 respondents were provided a card with the basic warning time options. The 1987 study respondents, queried by phone, had to react quite spontaneously.

It may well be that the card itself "suggests" to some respondents that there may well be more than "no warning" or just relatively "few minutes" or a "few hours" of warning time. In the phone interview, the respondent must react to the question, as stated, without any aid that could indicate some salient alternatives.

Yet, in principle, both the 1978 and 1987 studies tell the same story: most people expect the onset of a nuclear war to be quite sudden so that there would be very little, if any, time in which to be warned.

Time to Evacuate?

Table 6 provides data in response to a question of the following kind:

"If the people in your area were to evacuate and go somewhere else because of the danger that nuclear war might start, would there be enough time for them to do so?"

Table 6.

ENOUGH TIME TO EVACUATE?

<u>Response*</u>	1987	1978
	<u>Percent</u>	
Yes	19.1	18.4
Depends	23.2	21.4
No	57.4	60.5

* Don't know responses here were viewed as reflecting "indecision" and were classified as "depends" kinds of answers.

In 1978, a card was provided for the respondents and the options included "definitely yes", "definitely no" as well as "undecided, depends" and, of course, "probably yes" and "probably no" as well.

The results are well in keeping with the pessimistic estimates concerning warning time. Since, as far as most people are concerned, there would be just minutes or hours of warning time to begin with, it is not surprising that most people do not believe that there would be enough time in which to evacuate their area should such evacuation seem prudent or be urged by the Government.

How Long Might Evacuation Take?

Asked subsequently to estimate the time it would take to evacuate "people from their area" should such an evacuation be deemed desirable, 43.6 percent of the respondents believed that it could be accomplished in half a day or less. But this only further supports the notion that the perception of likely warning time involves such short durations, no time, mere minutes or but a few hours, that evacuation time would not necessarily be adequate.

Table 7 provides the distribution in cumulative percentages of those who chose to estimate the time it would take for people to evacuate "their area".

Table 7.

TIME REQUIRED TO EVACUATE RESPONDENT AREA

<u>Time Estimate</u>	<u>Cumulative Percent</u>
12 hours or less	43.6
A day or less	57.9
Two days or less	71.0
Three days or less	78.6
Five days or less	82.9

This implies that some 17.1 percent believe that an evacuation of the area would take in excess of five days; and, in all, 21.9 percent of all respondents either did not know and chose not to make a guess (21.3 percent) or did not answer the question (0.6 percent, 9 respondents).

But, of course, this distribution pays no regard to the difference between areas judged by the Defense Department or the Federal Emergency Management Agency as being at "high risk" or "safer". Only an analysis of the data will disclose the extent to which the pattern of answers differs, depending on whether people actually reside in "high" or "lower" risk areas in terms of NAPB-1990.

Sources of Initial Warning

Most people expect to receive their initial warning of an impending emergency via television and the radio. The question (asked in Part 2 of the instrument, and thus answered by 1398 of the overall 1595 respondents) probed into "emergency warning" acquisition in general, though it was made explicit that it also referred to warning in face of a possible nuclear war.

Table 8.

SOURCES OF INITIAL WARNING

<u>Warning Source</u>	<u>Percent*</u>
Television	46.2
Radio	45.3
Sirens	19.4
Phone	1.7
Friends, neighbors	1.0
Bells	0.4
Newspaper(s)	0.4
"DK", "No answer"	4.4

Note: Percentages do not add up to 100. More than one answer was allowed.

This is a somewhat puzzling result and a possible contradiction of sorts which subsequent analysis might help to clarify. Are the respondents really saying that they would get their initial warning of an impending disaster (including nuclear war!) from television or radio above all? And at the same time, they say that there would be "no warning time" or else, warning time of the order of minutes or at most a few hours? It does seem plausible on the face of it (Emergency Broadcast System?), but, on the whole, one would expect the mass media of communications, including newspapers to provide forewarning of situations that seemed like they would lead to a war in short order. But then, it might well be possible that people refer to the emergency broadcast system, and therefore even in this respect indicate but a warning of an imminent, or even an ongoing, attack.

Rather few of the respondents, in fact, expect to be warned by sirens and bells initially, a result not to be taken lightly in face of the kinds of major investments that such warning systems call for.

But, of course, matters are not as simple as that. The data seem to suggest that the public media would, at some point, have a sense of an impending conflict and would report so. In the face of an actual and more imminent danger, the Emergency Broadcast system would clearly play a critical role. This does not mean that sirens (and bells and whatever devices)

would not prove to be the final source of a warning of the more tactical variety. The point is, perhaps, of the following kind: it would be a mistake to rely on any particular source of warning and a multiplex system can do a better job than any single warning vehicle.

Nighttime Warning

Special problems may well arise during night hours: many people may not be awakened by the sound of sirens. Given the currently deployed warning technology, those who are asleep cannot be warned by television or radio while asleep.

In the 1987 study several questions were asked to shed light on the potential special and difficult nighttime problem.

Table 9.

REPORTED NIGHTTIME ACTIVITIES

<u>Activity</u>	<u>Percent</u>
No one in household awake	67.9
Someone awake part of the time	17.9
Someone awake	7.7
Someone awake and at work	6.6

Note: The hours postulated in the question were midnight to 6 A.M.

If anyone in the household, other than small children or infants, were awake during nighttime hours, it is not unreasonable to assume that such individuals would wake up and warn their family members, if they received the warning themselves, by whatever means. Thus in about 30 percent of the households someone is alert during the nighttime hours, at least for part of the time. Problems remain of assuring that a warning message, one of urgency, would be delivered to the 68 percent of households in which no one is awake, including single person households with the individual asleep.

The study probed further into the social networking process. The questions were posed immediately following the item on nighttime activity. It is not altogether clear whether the answers of the respondents refer to a more general situation, both daytime and nighttime, or whether they have to do with nighttime only. In any case the results are sufficiently robust to argue that if they have to do with

nighttime situations only, or predominantly, the daytime processes are likely to be equally, if not more, promising.

The respondents were asked:

"In a nighttime emergency in your area, do you think many people would try to contact their relatives, friends or neighbors right away to be sure that they know about the potential danger?"

- 97.5 percent of the respondents thought that this would happen,
- while 2.5 percent did not believe so.

How many people "in the area" might do so? The median response is around 75 percent estimate: thus the respondents anticipate that by far most people would try to alert their relatives, friends and neighbors.

- Only 2.0 percent claimed that 10 percent or fewer area people would try to warn relatives, friends or neighbors.
- 25.8 percent said that such networking would involve more than 10 percent of area people and up to 50 percent of them.
- 24.3 percent believed that such contacts would involve more than 50 percent, and up to 75 percent of the people in the area.
- 41.2 percent said that more than 75 percent of the area people would seek to warn their relatives, friends and neighbors in an impending emergency situation.
- And there were 6.1 percent of "don't knows", people who decided not to make a guess about the type of networking process which a threat of an emergency may trigger in their area.

Furthermore, 92.8 percent of the respondents were convinced that they themselves would be contacted by others under such emergency circumstances - and only 6.2 percent thought that they would not be contacted by others!

Though initial warning is mostly expected to come from the mass media, television and radio, much of nighttime warning is seen as originating from one's friends, neighbors and relatives whether in the form of an "initial" warning or as a kind of confirmation which, as is well known, most people seek anyway no matter how they may have been alerted and warned to begin with.

VI. ON NUCLEAR WAR SURVIVAL

Estimates of Survivability

The study respondents were asked about prospects of survival for "people in their area" under several different conditions. The responses could range from "very good" to "very bad", and the interviewees, of course, could volunteer an answer such as "no chances of survival at all". Such spontaneous mentions were recorded as a separate category.

Table 10.

PUBLIC SURVIVABILITY ESTIMATES

<u>Posture</u>	<u>Survivability Index</u>	<u>No Chance Percent</u>
"Next week's war"	.274	3.3
In fallout shelters	.424	2.4
In blast shelters	.501	2.3
Upon evacuation	.536	2.4
Upon evacuation and in fallout shelters	.578	2.1

Note: "Survival likelihood" values of 1, .75, .5 .25 and 0 were assigned to respective responses ranging from "very good" (survival chances) to "very bad" or "none" (the last response only when spontaneously offered).

The "no chance" percentage refers to respondents who spontaneously asserted that there was no chance of survival. The notion of "next week's war," which has been used in many previous national surveys, simply implies that "one would have to do with what is there": that is, whatever measures are "in place" would amount to the protective capability for the nation. The possibilities of a "surge" build-up (what might be actually accomplished in a short period of time if war were threatening) are not incorporated into the item either explicitly or implicitly. They require the kind of technical knowledge which people simply do not have at the time.

The "next week's war" premise provides a kind of baseline in terms of which alternative "postures" lend themselves to an evaluation. Clearly, four conclusions seem directly possible on the basis of these data:

1. All forms of protective postures yield consistently higher estimates of survivability, by an average factor of 1.86, than does the "next week's war" situation. They are thus all seen as having some effectiveness in enhancing survival chances.
2. "Evacuation", and especially when fallout sheltering is made an explicit aspect of a "relocated posture", produces the highest survivability values.
3. Only 1 in 50 respondents said that there were no chances of survival at all, a response which would likely yield somewhat higher percentages had it been explicitly mentioned in the response scale.
4. The guesstimates of survivability prospects even under plausible civil defense protective postures certainly cannot be interpreted as "optimistic": they all imply that only about half of our population would be expected to survive - at best some 60 percent.

Effectiveness of Protective Measures

Often, civil defense programs to provide protection for our people against both direct and secondary effects of nuclear weapons have deployed estimates of "survivors added" as an index of anticipated effectiveness. What do the data from public assessments of survivability prospects imply along such lines?

With a national population of about 243 million, a quick calculation based on the respondents' estimates of how many would survive "next week's war" baseline would indicate survival of some 66,582,000.

1. In terms of the data, fallout sheltering would "add" some 36,620,000 survivors.
2. Blast sheltering, in turn, would augment the survivor baseline by some 55,263,000.
3. Evacuating people from high risk to safer areas would result in 63,918,720 "added survivors" relative to the base.

4. Evacuating and providing protection against fallout (an approach on which all national programs of relocation or evacuation have, of course, been based) leads to 73,906,020 additional survivors.

No one would argue that public guesses in a quick interview provide an objective measure of survivability. But they do indicate how the nation's public thinks about the consequences of a nuclear confrontation and what payoff, modest though it is, is expected from alternative measures to protect people against "the hazards of nuclear war."

How Acceptable is Such "Effectiveness"?

Many items in the study shed light on the extent to which people seem to say that even these admittedly modest enhancements in survivability "make sense". At this point, only two such key items need to be highlighted.

In a series of questions (the interview sequence of which was randomized to avoid the possible effects of a specific sequencing), the respondents were also asked to "agree" or "disagree" with the following propositions:

"No civil defense program makes sense because it would not be able to help save enough people."

And again:

"Civil defense programs could save many lives should nuclear war ever happen."

The data of Table 11 sum up the responses in terms of the agreements and disagreements as expressed by the interviewees.

Table 11.

WORTHWHILENESS OF PROTECTIVE MEASURES

<u>Premise</u>	<u>Agree Percent</u>	<u>Disagree Percent</u>
Civil defense not worthwhile: could not help save enough people	14.4	80.0
Civil defense could help save many people should war come	76.2	16.7

Two conclusions would seem rather unavoidable:

1. People do not agree that civil defense program would make no sense because not enough lives could be saved, and they do, also most robustly, agree that such programs would, in fact, help in saving many lives.
2. In light of the modest estimates of survivability even with alternative protective programs, the results also imply that the enhancement in survivability which civil defense efforts might make possible "makes sense" and is worthwhile.

VII. HOME BASEMENTS

The respondents were asked whether they would favor or oppose a national program to use appropriate home basements as fallout shelters not only for the family or household members but also for others.

- 71.0 percent expressed themselves in favor or (spontaneously stated, as in 2.7 percent of the responses) strongly in favor of such a program. Among those with basements, the support index amounts to 71.2 percent.
- 21.7 percent were opposed or strongly opposed (0.3 percent). The percentage is 21.5 among those with basements.
- Some 3.8 percent volunteered a "depends" response. The "depends" response was given by 4.0 percent of those who reported to have basements in their place of residence.

47 percent of the respondents said that there was a basement in their place of residence. Among those with basements:

1. 10.4 percent claimed to have received some information about the possibility of using their basement as a fallout shelter.
2. 31.1 percent reported that they had given some thought to using their own basement as a fallout shelter.
3. 71.8 percent would allow "others" to use their basement for protection against fallout, 18.1 percent would (or could) not do so, and 7.9 percent stated that it "depended" on circumstances (which were not further specified). In the 1978 survey, 72.5 percent of people with basements expressed a similar willingness to provide sheltering for others.

Thus there exists strong support for a national program not only to put to use basements or other parts of the home as fallout shelters for the household residents themselves, but for others as well. There is a strongly expressed willingness on the part of those with basements to permit them to be used to shelter others.

It is also obvious that support for the basic idea of a program to use and share basements is as robust among those with basements as among those without them.

VIII. ON EVACUATION

Prior Experiences

The 1987 study shows that 6.6 percent of respondents have had to evacuate their residence on some prior occasion. And 7.9 percent reported having housed other evacuees in their homes.

By contrast, the 1978 results indicated 12.2 percent evacuation experiences, and 11.4 percent had mentioned to have housed evacuees on some particular occasions.

This may seem like a small, but not insignificant, anomaly in the data: if the margin of error at the .95 confidence level is less than 3 percent, and more like 2.5 percent, why should the 1987 findings suggest lower levels of experience with such evacuations than did the 1978 results? Almost certainly, this is an artifact of the sampling process. The most plausible explanation is presented briefly in Box 5 below.

BOX 5. EVACUATION EXPERIENCES

The multi-stage sampling approach of the 1978 survey leads to small subareas (city blocks, parts of census tracts) as the final sampling units from which households and specific members of households are subsequently selected probabilistically. These subareas are parts of census tracts which, in turn, are in sampled counties or metropolitan areas and in regions of the country (Northeast, North Central, South and West).

To the extent to which some counties or other appropriate subareas fall into the sample, and they happen to be in areas with the kinds of emergencies that do lead to evacuation (and to the possibility of housing evacuees from riskier parts of the area), it would not be surprising to find that there might be more evacuation experiences clustered in such subareas.

However, the telephone sample is more widespread (actually, all 48 contiguous states were included as was the District of Columbia). Therefore, there are relatively fewer cases in more compact subareas of the country where experiences with the relevant emergencies (floods, hurricanes - to give but a couple of examples) would be reported.

And there is another, but important, difference: in 1987, the "evacuation experience" question was asked only of those who reported some prior experience with major disasters. The 1978 question was asked of all respondents

- so that some evacuation experiences in that survey included implicitly reasons for evacuation not directly considered in the 1987 question (power outages and storms in general appear to have been included among the reasons for evacuation in the 1978 survey).

Spontaneous Evacuation

In both the 1987 and the 1978 studies the respondents were asked whether they (and their family or household members) would be inclined to evacuate "in an international crisis" in which it seemed that "it very probably might lead directly into a nuclear war".

A card, with a response scale ranging from "definitely yes" to "definitely no" was used in the face-to-face discussions of the 1978 inquiry. The 1987 question simply asked whether or not they would tend to evacuate, and "probably yes", "probably no" as well as "undecided, unsure, depends" types of answers were recorded only when offered spontaneously. Table 12. contains the comparable results for both studies.

Table 12.

INCLINATIONS TO EVACUATE IN A CRISIS

<u>Response</u>	1987 <u>Percent</u>	1978
Yes*	58.5	43.1
Depends, undecided	2.8	16.6
No*	34.0	35.5
"DK", No answer, "Other"	4.7	4.7

Note: "Definitely yes" and "probably yes" in 1978, "Yes" and "Probably yes" (in spontaneously offered) for 1987 data. "No" summary here simply opposite to the "Yes" categorization.

"Depends", "undecided" responses had to be volunteered in 1987; in 1978, such a category was included on the card to which respondents were exposed.

An index (ranging from 0 if all had said "no" to 1 if all had said "Yes") provides a value of "evacuation likelihood" of .548 in the 1978 inquiry and .620 in 1987.

It seems then that there is an increase in the "Yes" category in 1987: it is not far fetched to argue that this results from shifts from the 1978-type "depends" response into the "probably yes" or "yes" categories. And if so, it would indicate that respondents in 1978 may have "leaned" slightly in the "probably yes" direction though, on balance, they chose the middle category ("depends", "undecided"). By contrast, the percentages of those who were disinclined to say that they would evacuate spontaneously have remained stable.

In both surveys, though they are nine years apart, the rate of claims regarding inclination to evacuate spontaneously is quite high.

Evacuation Plans

Should there, in fact, be national plans to evacuate high risk areas? The response pattern is altogether clear:

1. In the 1987 survey, 76.7 percent said "yes" without any equivocation. In 1978, those who said "definitely" or "probably yes" amounted to 78.2 percent of the sample.
2. In the "depends" or "undecided" categories, the 1978 data show 10.0 percent of the respondents, and only 2.3 percent chose to give this answer spontaneously in 1987.
3. It appears that the "depends" type of response in 1978 was tilted more in the direction of "probably not" (as contrasted with the question on spontaneous evacuation) even though the respondents selected the mid-category answer: 17.7 percent in 1987 fell into the (volunteered) "probably no" and the "no" category, while it was 8.2 percent in 1978 when the "depends" category was explicitly included on the card which the respondents could inspect.
4. "Don't know" and "no answer" reactions characterized 3.5 percent of the 1978 respondents and 3.3 percent of the 1987 interviewees.

Without doubt, evacuation planning is favored in 1987 and remains favored by very robust majorities of the respondents.

Presidential Action Expectations

The majority of respondents do believe that there might exist circumstances under which the President would recommend or urge evacuation of some areas of the country.

1. In 1978, 66.7 percent stated that such situations were conceivable and plausible while 17.0 percent did not think so, and another 9.4 percent were "unsure".
2. In 1987, 73.7 percent responded that the President might urge evacuation under some circumstances, 19.9 percent did not think so, and 6.4 percent "did not know".

Note, of course, that the question deals with a Presidential "recommendation" or "urging" and in no way suggests that the President would order evacuation (in an effort to make it "mandatory").

Evacuation on Presidential Urging

One thing seems clear enough: the President would probably not recommend or urge evacuation under any circumstances, unless people could be told by appropriate emergency management officials or other government officials where they should go. Thus a potential presidential action along such lines, were it ever to take place even in a deepening international crisis (and the Soviets became known to be evacuating probable target areas themselves), would seem to presuppose, and quite necessarily, the development of evacuation or relocation plans.

Most Americans support such evacuation planning. And most also think that there could come about circumstances under which the President might recommend that people leave high risk areas and be advised as to which relatively safer areas they should move.

Table 13. sums up the data on expressed willingness to evacuate should the President ever make such a recommendation.

Table 13.

EVACUATION ON PRESIDENTIAL RECOMMENDATION

<u>Expressed Willingness</u>	1987	1978
	<u>Percent</u>	
Yes*	73.1	70.2
Depends, unsure	6.0	15.2
No*	18.0	12.4
"DK", "No answer"	2.9	2.3

Note: In "yes" category, "probably" and "definitely yes" for 1978. The "probably yes" response in 1987 had to be offered spontaneously. A similar pattern for this summary applies to the "no" answers.

In 1987, the "depends", "unsure" answer had to be volunteered.

The percentages leave no doubt about the basic willingness to comply with a possible Presidential recommendation to evacuate. If, in fact, those who are inclined to evacuate, whether spontaneously or only if the President suggested that they do so, were residents of high risk areas, the data would signify just about perfect compliance. Subsequent analysis of the information as a function of (a) perceived target danger to the respondent's area as well as (b) risk levels as identified in such documents as NAPB-1990 will provide a more direct clue on this issue.

The willingness to evacuate on Presidential recommendation is high: and this is important also due to the fact that it occurs in a context of expectations that, in general, there "might not be enough warning time" in which to evacuate. It seems that those interviewed are saying, in effect, that a Presidential urging would come in reasonably sufficient time if it were to come at all, and this is further supported by the strong support for evacuation planning.

Effects of Actions of Neighbors

To what extent might evacuation behavior be affected by seeing what other people in the neighborhood were doing? Two questions probed into such "contagion" (or "ripple") effects. One asked whether the respondent (and family) would be more or less likely to evacuate should they see their neighbors leaving. Another item asked whether they would be more or less

likely to evacuate if they noticed that people in the neighborhood are not leaving.

Table 14.

CLAIMS REGARDING EFFECTS OF ACTIONS OF NEIGHBORS

Respondent Inclination to Evacuate	Neighbors Seen Leaving	Neighbors Seen Staying
More likely	66.5	13.9
No difference*	14.0	28.8
Less likely	11.3	46.0
Depends*	4.8	7.5
"DK", "No answer"	3.4	3.8

Note: "No difference" and "depends" types of answers had to be volunteered.

Thus observing or noticing the behavior of other people in the neighborhood might have some significant effects on the actions of a given household. Furthermore, the type of actions on the part of neighbors affects the response: noticing that neighbors are evacuating induces enhanced claims of willingness to evacuate; noticing that neighbors are staying put as its primary effect decreased willingness to leave. But, at the same time, the reenforcement effect of seeing neighbors leaving is substantially stronger than is the effect of noticing that neighbors are not leaving.

Why some people would claim to act opposite to what their neighbors are doing (11.3 percent being less inclined to evacuate if neighbors are seen evacuating and 13.9 percent actually more likely to evacuate if neighbors were staying put) demands an explanation. None is attempted at this time since further analysis of the data can shed light on these interesting, if somewhat anomalous, results.

The respondents who gave the "depends" answer, seem in a basic sense to "belong" among those who said that the actions of people in the neighborhood would essentially "make no difference". Probing into the meaning of this "depends" response shows that they are referring to the "nature of the situation", "the kind of information they would have", "how much danger" they estimated there would exist (if not evacuating) and the like. In a few instances, the respondents indicate that their actions would depend on what their friends

were doing: thus they might be affected not by the actions of "people in the neighborhood" in more general terms, but by actions of a smaller group of friends, whether or not they live in the neighborhood.

Helping Evacuees

The respondents were asked:

"Suppose you and your family were in an area which did not have to be evacuated and which, in fact, became a host area for evacuees from elsewhere. Would you say your community would be helpful or not helpful?"

1. 91.3 percent of the respondents are convinced that their community, serving as a host community for evacuees "from elsewhere", would be helpful or very helpful (with the latter response recorded when spontaneously given, as happened in 8.0 percent of the cases).
2. Only 5.0 percent thought that their community would not be helpful.

Asked

"If your community were to receive evacuees, would most people be willing to have evacuees stay in their homes?"

the respondents robustly indicate their perception of willingness of people in their community to provide evacuees with temporary housing in private homes.

1. 81.9 percent said that people in the community would be willing to house evacuees.
2. 3.4 percent said that it "depends", and
3. 7.6 percent were doubtful whether such help would be forthcoming in their community,
4. and an additional 7.1 percent "did not know" what the response of the community people would be under such circumstances.

Finally in this brief series of probes, the respondents were asked whether they themselves would be "willing to have evacuees stay" at their place of residence.

1. 90.7 percent expressed their personal willingness to provide housing for evacuees.

2. Only 4.5 percent said that they would not do so, or not be able to do so.
3. 3.6 percent gave the uncertain "depends" response, and
4. 1.1 percent "didn't know" or (only one respondent!) refused to answer the question.

Some Highlights

- Some people have had personal experiences with evacuation, and some have also housed evacuees in their homes.
- Many people would be inclined to evacuate to what they view as, or are told to be, "safer" areas, should they reach the conclusion that an international crisis is likely to escalate into a nuclear confrontation.
- Though many people do not believe that there would be enough "warning time" in which to evacuate the area in which they reside, nonetheless, there is very strong support for the development of evacuation plans.
- Most Americans believe that there might arise a situation in which the President would recommend evacuation of some areas of the country; given such perceptions, evacuation planning obviously makes sense.
- A significant majority of people would tend to comply with the recommendation of the President to evacuate.
- Many people would be more likely to evacuate if they saw their neighbors "packing and leaving", and somewhat less likely to evacuate if they noticed that their neighbors are staying put.
- More than 9 in 10 Americans claim that their community would be helpful to evacuees should it be a host community for people evacuating from higher risk areas.
- More than 8 in 10 say that people in their community would be willing to share their homes with such evacuees.
- And again, 9 in 10 express their willingness to house evacuees in their own place of residence.

The data then, given the overwhelming patterns of public consensus, certainly speak for themselves.

IX. SOME ARGUMENTS AGAINST CIVIL DEFENSE

Some Preliminary Notes

Many arguments against civil defense measures as they relate to the hazard of nuclear war have been advanced by opponents of such programs. Not all arguments have been included in this study, but many were.

The survey was designed to show how the American people, on balance, think about such arguments. There is no intention here to "argue with the arguments", that is, to suggest which of them might or might not have some more objective than ideological, grounding, and thus greater validity as such. Rather, the study only shows the extent to which various assertions about civil defense and its effects seem credible or not credible to the respondents: after all, advocates of the various anti-civil defense positions tend to claim that they reflect the concerns and views of the nation's public. In the discussion on perceptions of survivability, two such arguments were already taken up:

1. 80.0 percent disagreed that civil defense programs make no sense because such measures would not save "enough lives".
2. 76.2 percent agreed that such programs are likely to save many lives.

What Assertions Americans Do Not Agree With

Table 15. provides the pattern of responses regarding assertions or statements with which the respondents predominantly disagree. The items are listed in terms of the strength of disagreement: in the questionnaires, all items pertaining to these types of arguments were randomized so that no single sequence of arguments was used from one interview to the next.

Table 15.

ARGUMENTS AGAINST CIVIL DEFENSE THAT ARE NOT CREDIBLE

<u>Argument</u>	<u>Disagree</u>	<u>Agree</u>
Given our strategic might, no enemy would dare to attack, so there is no need for civil defense	91.1	5.0
There is no need for civil defense because nuclear war will not come	88.6	5.7

	<u>Disagree</u>	<u>Agree</u>
Civil defense efforts increase the chances of nuclear war, because they signal to the Soviets that we are preparing to start a war	84.0	9.1
Civil defense makes further agreements on arms control more difficult, if not impossible	74.9	14.8
Antimissile defense around key cities and military installations makes civil defense measures to protect our people against a nuclear attack less needed*	72.2	20.9
Civil defense programs make our people more complacent about nuclear war and might lead to a "false sense of security", making nuclear war more acceptable	71.0	22.2
Civil defense programs increase anxiety and fear on the part of our people	63.7	30.2
If we can have active defense weapons in space that can shoot down some number of enemy missiles before they can reach their targets, there would be less need for civil defense measures that protect our people against nuclear attack*	62.6	32.5
An agreement between the United States and the Soviets to stop the production of more nuclear weapons would make civil defense measures to protect our people against nuclear war less needed*	58.2	37.8
Even if people were to survive a nuclear attack, life would not be worth living	53.7	35.7

Note: Items marked with an asterisk were included in Part 2 of the instrument. While responses to all the other items are based on the total sample size of 1595, Part 2 of the questionnaire involved 1398 respondents.

In effect then, the majority of people are saying

1. that the strategic deterrent posture by itself is not quite enough
2. that nuclear war is not impossible and some measures to protect our people remain needed
3. that civil defense programs do not increase the likelihood of a nuclear confrontation
4. that such programs do not jeopardize efforts to reach viable arms control agreements
5. that, for the most part, people would become neither more complacent nor more anxious
6. that ABM or SDI defenses, as active defense measures, would, on balance, not reduce the need for civil defense programs
7. that a "nuclear freeze" would not decrease the need for civil defense efforts
8. that life, even after a nuclear holocaust, might be worth living though, of course, many respondents also say that it might not (though they do maintain their support for civil defense programs).

What Statements the Respondents Agree With

Here, in Table 16., are some assertions to which the respondents were exposed to and with which more of them agreed than disagreed. Again, the Table lists the items from highest to lowest level of agreement and it is worth repeating that all statements were randomized in their presentation to the respondents.

Table 16.

STATEMENTS WHICH ELICITED MORE AGREEMENT THAN DISAGREEMENT

<u>Argument</u>	<u>Agree</u>	<u>Disagree</u>
Police and fire services in evacuated areas would have to be increased to prevent looting, arson and other problems	82.2	13.7
Even after a nuclear war, the survivors could rebuild America and make the best of it under the circumstances	62.8	26.4
Civil defense measures to protect our people against a nuclear attack will be more needed if we don't deploy antimissile missiles*	57.2	35.2
By showing that we are prepared for anything that could happen, civil defense contributes to deterrence and makes nuclear war less likely	47.6	44.2

Note: Item marked with an asterisk was included only in Part 2 of the study instrument.

Though almost 27 percent disagree, some 63 percent of the respondents do believe that America could be rebuilt even were the country to undergo the ultimate disaster of nuclear war. Undoubtedly, this is an important result as is the finding that people do not associate particular civil defense programs with possible benign effects on the likelihood of war (though, as has been shown, the majority, at the same time do not believe that such programs would prove "provocative" and increase the chances of war).

A Concluding Note

All this then implies that people think of civil defense programs as they relate to attack-preparedness in terms of their lifesaving potential. They support such effort - even though the survivability estimates indicate that they in no way assume that such programs could save "all" people. They do not find the main arguments against civil defense very credible.

Yet, it must be kept in mind that "minorities" who hold a position at variance with the dominant pattern of thinking neither can be disregarded nor are they, invariably, small: thus around 1 in 3 of the respondents did think that people might become more "complacent" about nuclear war or develop some more "anxiety" and "worry".

But do people speak of "complacency" or "anxiety" increases on their own part or simply "projecting" such effects on others while they, themselves, would remain "immune" to such possible effects? Unfortunately, this kind of probing was not included in the instrument, though it should have been.

X. SOME STRATEGIC PERSPECTIVES

Introduction

In the second part of the interview (N=1398), the respondents were also asked to express their agreement or disagreement with a series of statements that bear on issues of arms control on the one hand and nuclear weapons policy on the other hand.

This was done to acquire some, and quite naturally limited, estimates of what kinds of arms control measures seemed acceptable to the public and what people were thinking about some key issues in deploying nuclear weapons in a confrontational situation.

Arms Control

Clearly, the few items included in this particular series of questions do not claim to represent the spectrum of alternatives regarding plausible arms control agreements. But they do tap some central themes which have implications for all efforts to arrive at agreements with the Soviet Union.

Table 17.

SOME VIEWS ON ARMS CONTROL

<u>Statement</u>	<u>Agree</u> <u>Percent</u>	<u>Disagree</u>
We should agree on the reduction of nuclear weapons if it leads to making the Soviets and the United States about equal in strategic military power	79.9	16.5
The United States and the Soviet Union should withdraw all intermediate range nuclear missiles from Europe*	67.3	30.9
All tests of nuclear weapons, underground, on the surface or in space should be done away with because they get in the way of Soviet-American arms control agreements	44.8	46.5

In arms control talks, we should agree on the reduction of nuclear weapons only if it means that the United States could maintain some superiority over the Soviet Union

41.7

51.5

We should stop the production of more nuclear weapons on our own, whether or not the Soviets agree to do the same

34.7

59.2

Note: The statement marked by an asterisk was included only in the latter part of the study and was thus asked of only 608 respondents. The probable margin of error (at .95 confidence level) is about 5 percent.

Thus Americans do not favor unilateral limitations on nuclear weapons by the United States alone, but also do not insist on maintaining weapons superiority over the Soviets. If relative parity can be the consequence of arms control agreements, the policy finds strong support among the public as does a potential agreement to withdraw nuclear missiles from Europe.

About as many people disagree as agree that continued testing of nuclear weapons might create some difficulties around the negotiating tables - though, as the data show, disagreements with this proposition slightly outweigh agreements. This is quite in contrast with the finding that some 75 percent of the respondents do not accept the assertion that programs of civil defense have negative effects on arms control negotiations or possible agreement. Only some 15 percent agreed with this type of an argument.

Nuclear Weapons

The data of Table 18. provide a summary of the responses to a series of statements having to do with the possible deployment of nuclear weapons.

Table 18.

VIEWS ON NUCLEAR WEAPONS USE

<u>Statement</u>	<u>Agree</u> <u>Percent</u>	<u>Disagree</u>
Nobody could win a nuclear war	87.4	9.9
If the Soviets were to use nuclear weapons against us, we should use them in retaliation	77.4	14.4
The only time we should use any nuclear weapons is if an enemy, such as the Soviets, were to use nuclear weapons against the United States homeland	74.1	20.6
In an international crisis in which it seems just about certain that the Soviets might use nuclear weapons against our country, we should attack first and use our nuclear weapons to reduce Soviet capabilities for attack	30.9	57.0
No matter what the situation, the United States should never use nuclear weapons	28.8	65.2
If an enemy, such as the Soviets, were to threaten us with nuclear war unless we meet their demands and conditions, it would be better for all of us to accept their demands and conditions rather than face the possibility of nuclear war	18.4	73.3

The public thus expresses a strong conviction that a nuclear war is not "winnable." One meaning or interpretation of this response is that at least as far as the warring parties are concerned, "no one" would "prevail". Another meaning is that, although one party might prevail with respect to the terms of ending the conflict, both parties would be much worse off regardless of which prevailed. Yet, despite this view, the United States should retaliate if nuclear weapons are used in a war against the nation, and people disagree, quite strongly, that the country should not adopt a policy of "never" using nuclear weapons - and certainly not in face of nuclear blackmail. Nor should the United States strike first even if it

appeared quite certain that the country might be facing an imminent attack itself. But, to repeat: the United States should then retaliate even if it means that "nobody could win" anyway.

If deterrence rests with the adversary's conviction that the United States maintains a force sufficient to make an attack altogether unappealing, it rests perhaps even more with the adversary's perception that the United States actually has the resolve) to use its military might if attacked. The public mood is strong in support of policies which mirror such a resolve. It is possibly not too exaggerated to say that such public sentiments, no matter how otherwise problematic they may be, are an actual contribution to deterrence and thus to strategies of war prevention rather than conduct.

XI. SOME ISSUES IN HOMELAND DEFENSE

Introduction

Strategic weapons capabilities lie certainly at the very core of the deterrent capabilities of the nation. But, of course, defense systems as such are themselves contributing to create and maintain an international environment in which a direct nuclear confrontation between major powers remains rather unlikely.

At the same time, defensive measures have perhaps a more fundamental role to play, especially should deterrence fail, under whatever dire circumstances. In this respect, arms control agreements, if adhered to by the adversary as well as by the United States, are themselves a significant "defensive" measure. (Implicit in this is that such adherence is verifiable.) For all purely defensive systems aim at limiting loss of life, danger to public health, and damage to property and the environment.

In this perspective on "defensive systems", including arms control programs in effect (rather than only under negotiations), the rationale might be of the following kind:

1. Arms control agreements induce a situation in which either (a) only limited additional strategic weapons get built and deployed, or (b) no new weapons systems get built and deployed, or (c) existing weapons stockpiles are reduced, or (d) at the very end of the option spectrum, even eliminated). And this, in any form, places some limits on the numbers and types of weapons that would be used by an adversary in an attack on the United States so that the overall magnitude of insult is more limited than it would be in the absence of suchlike agreements.
2. Active defense systems serve to blunt the impact of an attack should it ever occur - and this is so regardless of the kinds of limitations which "arms control agreements" may place on the available armamentarium. Whether in the form of "point defenses" (ABMs essentially) or much wider "area defenses" (as built into the concepts of the Strategic Defense Initiative), the objective is to destroy some or, quite naturally, as many as possible attacking weapons systems before they can reach their targets. Any weapons systems that could not penetrate the active defense barrier, no matter how imperfect it may be, degrade the adversary's attack capabilities and limit possible damage that can be inflicted.

3. Passive defense measures, programs of civil defense against the hazards of nuclear war, establish the "last line" of defense. They aim at "blunting" the attack by aiming to help protect people against the impact of those weapons that would "get through" active defense barriers and that would not be restricted by arms control measures.

How then does the public, in 1987, view such defensive systems?

Best Option

The respondents were asked which would be the single best alternative for the defense of the country should it ever be attacked. Table 19. contains the basic data.

Table 19.

BEST DEFENSE ALTERNATIVE

<u>Alternative</u>	<u>Percent</u>
Arms control	39.7
Strategic Defense Initiative (SDI)	16.7
Civil defense	14.3
Anti-missile missiles (ABMs)	12.2
"DK", "No answer"	17.1

Quite a few people said that they did not know; but those who answered the query felt that arms control agreements were the single best way to go in the interest of national security. But none of the alternatives seemed disregarded as "best" serving national security interests. In all, actually, 28.9 percent chose the active defense measures (SDI and ABM's), and those who selected either active or passive measures turned out to be the plurality of respondents (47.2 percent).

Damage Limiting Options Reconsidered

Following the question seeking a single statement as to which alternative defense effort was best relative to national security objective, the respondents were also faced with pairwise choices among the options. They were told:

"Now, for each pair of programs that I read, please tell me which one you think achieves the national security objectives better."

The results are given in Table 20.

Table 20.

PAIRWISE COMPARISONS OF DAMAGE LIMITING OPTIONS

<u>Alternative</u>	<u>Civil Defense</u>	<u>Arms Control</u>	<u>ABM</u>	<u>SDI</u>
Civil defense	---	28.2	44.7	45.4
Arms control	63.7	---	62.2	62.2
ABMs	42.5	27.3	---	35.8
SDI	43.9	28.8	46.7	---

Note: In each row, the percentage is given of those who prefer the "row" option over the respective "column" option. Thus 28.2 percent value "civil defense" (row 1) more than "arms control" (column 2), while 63.7 percent prefer "arms control" (row 2) to "civil defense" (column 1), and so on.

Here, the results indicate that arms control measures are preferred (or seen as a "better alternative") over all the other options. Civil defense programs, in turn, are viewed as slightly preferable to active defense alternatives, and SDI is favored over point defenses of the ABM variety.

A General Index of Preferences

To summarize the data, a simple general index was used: it distributes 1,000 points among the alternatives and thus gives a crude but not unreasonable clue to the kind of mix of damage limiting systems that is implied in the data. These points, in turn, might be viewed as "dollars per 1,000 dollars", "energy/manpower units per 1,000 units" or, for that matter "time investment per 1,000 units of time". A brief explanation of this index is given in Box 6 below.

BOX 6. PREFERENCE INDEX EXPLAINED

The percentage points across each row were added. These indicate the rate at which the respondents preferred the system with the respective row label over the systems identified in the columns. This produced a column vector of such sums, one sum for each row-headed option.

This resulting column vector was then normalized, that is, the sum of the column vector formed the base into which the sums of each row were divided.

The results of this simple arithmetic are provided in Table 21.

Table 21.

SUMMARY EVALUATION OF DAMAGE LIMITING ALTERNATIVES

<u>Alternative</u>	<u>Points</u>
Arms control measures	354
SDI	225
Civil defense	222
ABMs	199

In all then, it is clear that the American people express support for arms control programs as the single most preferable mode of reducing the danger of war (as has been noted in previous sections of the paper) and as a vital program in the interest of national security. It must be reiterated, of course, that not all arms control programs are acceptable or even equally acceptable: unilateral measures on the part of the United States are, in general, not seen as viable or prudent. At the same time, the respondents indicate the importance of both active and passive defense measures which are not seen "at odds" with the need for, and desirability of, effective agreements on arms control.

XII. ON "NUCLEAR WINTER"

Since the publication of the TTAPS "nuclear winter" paper, and the publicity accorded the hypothesis (and with less, though still some, publicity provided for the subsequent National Academy of Sciences and Defense Department studies) it is clearly relevant to determine how many Americans claim to know something or other about "nuclear winter" - and how much they appear to know.

Asked whether they had heard the term "nuclear winter"

1. 40.0 percent of the respondents said that they had.
2. 58.6 percent stated that they had not,
3. and 1.4 percent were unsure.

A follow-up probe sought to determine what it was that the interviewees knew about "nuclear winter" if, in fact, they claimed knowledge of the concept.

The responses were coded in this preliminary coding into "high", "medium", "low," and "no" knowledge claims for those who indicated some knowledge (40 percent of the sample).

"High" knowledge involved responses about the type of process by which "nuclear winter" would come about and its consequences for the climate. Typical responses in this category would be that the "sun would be blacked out, the weather would become cold, the environment would be hostile due to the climatic change" and the like.

"Moderate" or "medium" knowledge involved more general responses. Typical were answers that "fallout would upset the atmosphere, seasons and the weather" or that "radiological particles would upset the natural cycle". However, these respondents may also be quite informed, which would have been ascertained had the responses been probed further.

"Low" knowledge was viewed as characterized by responses such as that "nuclear winter" meant "radiological fallout from rain and snow" or that there might be a "drastic change in weather after a nuclear war" (without specifying that it might get cold or why this effect would come about).

"No" knowledge category included people who said that "nuclear winter" meant "fallout after the attack" or that it meant "win and survive" and the like. Table 22 provides a summary of the result in terms of this preliminary knowledge level index.

Table 22.

KNOWLEDGE ABOUT "NUCLEAR WINTER"

<u>Knowledge Level</u>	<u>Of Those Who Claimed to Know</u>	<u>Of Total Sample</u>
High knowledge	14.7	5.9
Medium knowledge	22.8	9.2
Low knowledge	47.3	19.1
No knowledge	3.4	60.0*

* Note: The percentage marked with an asterisk includes also the 58.6 percent who had no knowledge about "nuclear winter" at all and were thus not asked what the concept meant to them.

Thus many people appear to have heard the term "nuclear winter" but their knowledge about what the hypothesis is all about does not tend to be high. Yet, the anticipated confusion between "nuclear freeze" and "nuclear winter" essentially did not show up in the data at all.

Further recoding of this open-ended probe is likely to show more insight than the present, rather stringent, code would indicate. If credit for "fair knowledge" is given to people who referred to "weather" or "climate" changes (even without mentioning that it involved "cold weather or "cooling" of the climate and without mentioning how such a process might be triggered), the overall estimate of information level would undoubtedly increase. Additional recoding of the responses with a more liberal interpretation of the answers will permit a new, perhaps better, but certainly alternative assessment of the knowledge level as it pertains to the "nuclear winter" hypothesis.

XIII. ON EMERGENCY RELATED TRAINING

The respondents were asked about their own training or education as it relates to emergencies and disasters, and also whether or not anyone else in the household may have received such training or education. They were also asked to recall approximately "how long ago" they underwent the training they claimed to have received, and the same probe was made in those cases in which the respondents reported that someone else in the household was so trained (whether or not they themselves were). Table 23 is a summary of the information acquired from these interviewees.

Table 23.

EMERGENCY RELATED TRAINING CLAIMS

<u>Type of Training</u>	<u>Respondent</u>	<u>Other Member of Household</u>
First aid	59.4	31.4
CPR	45.8	26.1
Nuclear attack related	10.7	3.8
Paramedic	6.6	4.3
Radiological monitoring	5.7	3.0
Shelter management	4.3	1.5
Other emergency or disaster related training	17.8	8.6

Unfortunately, a probe was not included to determine what the respondents had in mind when they referred to "other emergency or disaster related training". Analysis of the data in terms of occupational background, however, may shed significant light on this issue. It may well include people with training in the health services (physicians, nurses, medical technicians), fire fighters, police officers as well as former members of the Armed Forces (though most of the latter may well have also been among those who claim to have received some training regarding "what to do in case of nuclear attack").

The responses regarding the training experiences of another member of the household yield consistently lower percentages than do the claims about the respondent's own training or education. This is not surprising: the data have

not separated out those respondents who live alone so that, in effect, there could be no other household member involved. Further analysis will, of course, make this differentiation possible. As it is, the findings refer to the sample as a whole in disregard of the size or composition of the household. Many people assert that they received their training or education just within the past year or so. And by far most educational experiences are reported to have taken place within the past 10 years.

1. 79.5 percent of those with first aid training acquired their knowledge within the past 10 years and about 26 percent within the past year.
2. Some 94 percent acquired their knowledge of CPR procedures in the past 10 years, and about 32 percent in the past year.
3. Some ideas as to what to do "in case of nuclear attack" seem to have been acquired in the past 10 years by 66.0 percent of the respondents, and 25.0 percent of them in about the past year.
4. About 74 percent learned their paramedic skills in the past ten years, and 40 percent in the past year.
5. Radiological monitoring skills were acquired within the past 10 years by 78 percent. In the past year, by 35.5 percent.
6. Shelter management capabilities were developed in the past 10 years by 64 percent and by almost 40 percent (of the 4.3 percent who claim such knowledge) in the past year.

Are people willing to update their knowledge and skills or, for that matter, to undergo training to acquire them? Almost 8 of 10 respondents said "yes" without hesitation (Table 24.).

Table 24.

WILLINGNESS TO UPDATE OR RECEIVE TRAINING

<u>Response</u>	<u>Percent</u>
Yes	78.0
Depends*	5.0
No	14.2
"DK", "No answer"	2.8

Note: The "depends" response marked with an asterisk was recorded when offered spontaneously.

The findings suggest a very large reservoir of knowledge and skills relevant to coping with emergencies and disasters. The responses also express a very strong willingness to update one's emergency-related training or, among those without such prior training or education, to participate in programs that would provide them with such knowledge and skills.

There may be some exaggeration here, at least as far as actual usability of such knowledge and skills in an emergency is concerned. The claim that one was "trained" or "educated" along certain lines does not, by itself, yield assurance that the training was effective and that the knowledge and skills have been internalized sufficiently or that they could be actually put to use. The lapse of time between the time of the 1987 study and the recall of the approximate year in which such training was acquired presents obvious problems of forgetting as well as potential obsolescence of whatever may have been learned.

On the other hand, the robust percentage of those willing to update their knowledge or acquire emergency-related knowledge and skills is, at the least, a crude measure of the high level of interest. More importantly, it is also a crude measure of opportunities for providing training and educational programs that could tap this pool of interest, if only a portion of it.

XIV. ON VOLUNTEERING

Americans are well known to do a great deal of voluntary work. In the second part of the 1987 survey (N=1398), the respondents were asked whether they did undertake any voluntary work during the prior 12 months or thereabouts.

1. 34.7 percent reported to have been engaged in volunteering in the course of the past year; in the 1978 study, the corresponding percentage was 30.8 percent.
2. The median time that was spent on such efforts by those who did some volunteering (in the question, asked in terms of hours per month) amounted to 122 hours per year, a little over 10 hours per month or around 2 hours per week.

Would people be willing to volunteer for "emergency and disaster-related activities" were there "a call out for volunteers"? Table 25. sums up the result.

Table 25.

CLAIMS REGARDING WILLINGNESS TO VOLUNTEER

<u>Response</u>	<u>Percent</u>
Yes	75.7
Depends*	8.7
No	13.7
"DK", "No answer"	1.7

Note: The "depends" (asterisked) response recorded only when offered spontaneously.

In the 1978 survey, 61.8 percent said that they would "definitely" or "probably" volunteer "if a call went out" for volunteers for civil defense activities. In 1987, the question did not refer to "civil defense" as such, but to activities having to do with "emergency and disaster preparedness". Whether the increase in expressed willingness to volunteer from 1978 to 1987 is a function of the more "comprehensive" wording of the 1987 question or reflects an actual increased interest is not possible to ascertain. But, of course, both the 1978 and the recent studies show extremely high levels of interest in participating in emergency preparedness programs on a voluntary basis. Thus such reasons as might be surmised for the

difference in the 1978 and 1987 percentages is almost a moot point.

In all, the median shows that those who claim their willingness to volunteer for "emergency and disaster preparedness programs" say that they would be willing to invest about 126 hours per year in such activities.

Only further analysis will show whether those willing to volunteer for broadly conceived emergency management efforts are also the same people who have already been engaged in voluntary work, or whether the emergency preparedness programs would "tap" the previous pool of non-volunteers and to what extent.

Do people think that they have some "special skills" to offer to community programs of emergency preparedness?

1. 27.4 percent do believe that they have some special contribution to make, while
2. 40.9 percent do not think so, and
3. 31.7 percent of those willing to volunteer are uncertain whether they do have "special skills" to contribute.

What kinds of "special skills" tend to be offered by the respondents? Those who were willing to volunteer and who did claim some special skills as their possible contribution (N=383) suggested a considerable array of possibilities: traffic control, radiological monitoring, shelter management, fire fighting and policing services, construction, carpentry, welding, and social work are among the responses, though each is mentioned by only a few respondents. Similarly, a few electricians and a couple of pilots, individuals working for the Red Cross and a few (N=4 to be exact) specifically trained in emergency management are found in the overall listing. Most frequent mentions, however, include the following:

1. 22.7 percent mention specifically their ability to provide medical help, and
2. another 16.4 percent refer to their first aid skills.
3. 6.2 percent mention their ability to cook and feed people
4. 4.4 percent refer to teaching

5. 3.9 percent consider their organizational skills relevant, and another 3.1 percent their managerial skills
6. 3.1 percent mention their clerical skills as appropriately usable in this context, and
7. 2.9 percent can help with communications.

Thus there exists not only a very large reservoir of willing volunteers but also of abilities and skills that go with it. It is true, of course, that some people prefer to volunteer in order to acquire new skills and knowledge while others prefer to use the skills and knowledge they already possess. It is not unfair to suggest that people who expressed their willingness to volunteer but did not identify any relevant skills, or at least many of them, may well fall into the category of those volunteers who seek to learn something new, while those who mentioned specific ways they could help, for the most part, would prefer to use knowledge and skills they already have.

No one should, of course, assume that some 75 percent of people would actually volunteer "if a call went out" for volunteers. For one, in the interview process people are approached individually, whether in a face-to-face or phone discussion. Thus a "call for volunteers" via the newspapers, radio, television or even by mail is not isomorphic to the interview situation in which such volunteering expressions of willingness are offered. Second, the interview situation does not establish an actual commitment: thus it can be expected that some people with very good intentions (reflected in the interview context) may change their mind, not live up to what they may have said, or that their personal situation may have changed. Third, on any given day or at any particular hours of any given day, the effective possibilities for voluntary work may be limited - so that, in fact, only a relatively small portion of those who are willing would be in a practical position to offer their services on a given day or during particular hours of the day.

Regardless of such qualifications, necessary though they are, the potential willingness to participate in programs of emergency and disaster preparedness at the community level is so high that "all" possible volunteers could hardly be meaningfully deployed.

In any case, the issue is not primarily one of recruiting volunteers. Rather,

"the problem, in general, would turn out to be what to do with volunteers to reap the most benefit from their time and effort.."

as was asserted in the 1978 report (Issues of Civil Defense: Vintage 1978, p.86).

XV. RESPONSIBILITY FOR WAR PREPAREDNESS

The respondents were asked who, in their opinion, "should have the responsibility for planning what ought to be done to prevent, or deal with" natural disasters, technological hazards and nuclear attack. The main options included "community volunteers", "the private sector" and "government". Whenever "government" was mentioned, a further probe was conducted to determine whether the respondents had the local, county, state or Federal Government in mind.

The data on natural disasters and peacetime technological hazards are presented in a subsequent section of the report. Here, Table 26. contains the aggregate data regarding the public assignment of responsibilities for dealing with the hazards of nuclear war.

Table 26.

RESPONSIBILITY FOR ATTACK PREPAREDNESS

<u>Responsibility</u>	<u>Percent</u>
Federal Government	72.5
State Government	33.4
Local Government	29.5
Community volunteers	25.6
County Government	24.6
Private sector	18.4

Note: Since more responses than one were possible (and recorded), the percentages, of course, add to more than 100 percent.

Apart from the obvious observation that the Federal Government is viewed as having the key role to play in war preparedness and attack mitigation measures, it is also clear that many respondents suggest a mixture of responsibilities with the Federal Government in the lead role.

In fact, on the average, the data indicate 2 responses for each interviewee. Some 22 percent of all the answers refer to either community volunteers or the private sector (the industrial, business and commercial community) so that, in this sense, about a fifth of the overall responsibility falls on individuals and organizations other than the Government at whatever level. The mentions of "community volunteers" become

particularly meaningful in light of the finding that almost 3 out of 4 respondents said that they would be inclined to volunteer for emergency and disaster-related efforts, including programs of attack preparedness, that they would be willing to invest up to some 122 hours per year into such volunteering, and similarly large numbers would be prepared to update their training or acquire training relevant to disaster preparedness.

XVI. WARTIME AND PEACETIME EMERGENCY PREPAREDNESS: SOME INTERACTIONS

Under a threat of a disaster, people have to be alerted and warned. This is undoubtedly true whether the danger is of a peacetime or wartime variety. The need to be warned was, in fact, identified as the single most important goal of civil defense systems, as has been already shown.

People want to be provided with timely, relevant information - with information on the basis of which they can act to minimize risk to life or health, damage to property and environment. The requirement to receive such pertinent information was cited as the second most important objective of civil defense efforts. It, too, applies both to peacetime emergencies and to the possible threat of an imminent outbreak of a nuclear war.

In face of various hazards, such as hurricanes or floods, for instance, people have to be encouraged, or directed, to evacuate their threatened residential areas and move for a time to locations considered likely to be "safer," if not necessarily altogether "safe". This is similarly a kind of function and process common to attack-related preparedness systems and to several types of peacetime hazards. One need not assume that the actual operations are identical for both wartime and peacetime hazards: but the central process of developing evacuation plans is not different even though the location of "safer" (or "host") areas varies quite significantly as do other aspects of an actual evacuation.

These are merely examples of some of the important functions which are common in principle (though not in detail at all!) to peacetime and wartime emergencies. The notions of "all hazards" programs, of "comprehensive emergency preparedness" systems, or of "integrated emergency management systems" are all based on the premise that many measures which are planned, or put in place, to help deal with natural or technological hazards in peacetime have some, if limited, applicability in face of a threat of nuclear war. And the reverse is also true: the more "comprehensive" approaches to emergency management are similarly predicated on the idea that attack preparedness programs have positive spin-off effects for the quality of preparedness vis-a-vis peacetime dangers.

To what extent do such premises reflect also the views of the American public? The respondents were asked:

"Do you think that plans to deal with peacetime disasters, like tornadoes or nuclear power plant accidents, would be

helpful in coping with a nuclear attack, should it ever take place?"

Later on in the course of the interview, the proposition was reversed:

"If the nation were well prepared for civil defense against nuclear war, including local plans, do you think that would help us to cope with peacetime disasters and emergencies?"

The results are summarized in Table 27.

Table 27.

PEACETIME/WARTIME HAZARDS PREPAREDNESS INTERACTIONS

<u>Response</u>	<u>Preparedness</u> <u>Peacetime to</u> <u>Wartime</u>	<u>Helpfulness</u> <u>Wartime to</u> <u>Peacetime</u>
Yes, would help	67.2	82.3
Depends*	1.4	1.3
No, would not help	22.6	8.7
"DK", "No answer"	8.8	7.7

Note: The asterisked ("depends") response recorded only when spontaneously given.

Most people, indeed, see beneficial spin-off effects both from peacetime preparedness for attack preparedness and from wartime emergency preparedness for peacetime coping with emergencies and disasters. But, of course, it is evident that many more people (some 82 percent as compared with 67 percent) consider the benefits of wartime preparedness measures for dealing with peacetime hazards to be greater than "the other way around".

Those who claimed that peacetime emergency preparedness would be helpful in being able to cope with the hazard of nuclear war as well, and those who volunteered the "depends" response, were also asked to elaborate on the way(s) in which peacetime preparedness would contribute to attack readiness. Table 28. presents the main results (N=1095).

Table 28.

HOW PEACETIME MEASURES CONTRIBUTE TO ATTACK PREPAREDNESS

<u>Response</u>	<u>Percent</u>
Provide experience	42.7
General experience	33.0
Communications experience	6.3
Experience due to "practice"	3.4
Information, knowledge	39.7
Inform, educate the public	23.6
Evacuation-related knowledge	6.8
Sheltering-related knowledge	5.7
Teach people to help themselves	2.6
Help establish plans, policies	23.6
Help develop organizational skills	7.5
Help reduce panic	2.5

By contrast, the respondents (N=360) who did not think that peacetime preparedness would contribute to preparedness in face of a possible nuclear attack

1. emphasized (38.9 percent of them, representing 8.8 percent of the total sample) that nothing could be done to enhance wartime preparedness anyway, and
2. 38.0 percent (8.6 percent of the total sample) said that peacetime and wartime hazards represented such different situations as to negate any possible spill-over effects from peacetime to wartime preparedness.

In a similar vein, interviews who said "yes" or "depends" to the question as to whether preparedness for nuclear war hazards would help in coping with natural or technological peacetime dangers (N=1333) were asked about the kind of contribution they had in mind. Table 29. is a summary of the findings.

Table 29.

WARTIME PREPAREDNESS CONTRIBUTION TO PEACETIME CAPABILITIES

<u>Response</u>	<u>Percent</u>
Information, knowledge, skills	56.5
Preparedness, training	37.0
General information, education	19.5
Plans, policies	21.0
Develop evacuation and shelter plans	10.2
Help establish policies	10.8
Develop organizational skills	8.9
Contribution due to similarities of required actions	2.8
Help reduce panic	2.6

There were also 139 respondents who thought that nuclear war preparedness measures would not have beneficial effects for preparedness to deal with peacetime hazards.

1. 40.3 percent of them (3.5 percent of the total sample) said that the peacetime and wartime dangers were so different that there would be no beneficial interactive effects at all
2. 17.3 percent (1.5 percent of total sample) insisted that no war preparedness measures would work anyway and thus they could also not contribute to peacetime readiness.

Not only do most Americans believe that the interactions between peacetime and attack preparedness systems are generally mutually beneficial: they also give basically similar reasons why peacetime systems would benefit wartime preparedness on the one hand, and wartime preparedness measures would contribute to better abilities to cope with peacetime disasters and emergencies. The main difference lies only in the fact that people expect to learn from experiences with peacetime disasters (although the disasters themselves are, of course, not desirable) while, naturally, the attack "experience" is something one hopes to avoid above all. But the key to the interaction rests with the enhancement of public information and knowledge, with improved organizational capabilities, with the establishment of plans and policies appropriate to the hazard(s).

Concepts and doctrines of "all hazards management" or of "comprehensive emergency management" and the like thus find a fertile soil in the way in which the public tends to look at these issues.

XVII. ON CIVIL DEFENSE FUNDING

Introduction

The respondents were told:

"The Federal Government spent about \$ 130 million on programs of preparedness against nuclear attack in the past fiscal year. That is about 56 cents per person. Do you think this spending should be increased, decreased, or is about right?"

Those who said that such spending "should be increased" were further asked whether they "would be willing to pay an additional 25 cents" for each member of their household per year if such money were used for civil defense purposes.

And, in turn, those who said that they would spent an additional quarter per household/family person per year were also asked "how much more than 25 cents" they would be willing to pay.

Willingness to Spend and Pay More

The results are summarized here in Table 30.

Table 30

EXPRESSED WILLINGNESS TO SPEND MORE AND PAY MORE FOR CIVIL DEFENSE PROGRAMS

<u>Response</u>	<u>Percent</u>
Funding should be increased	33.9
Willing to pay additional 25 cents per person per year (or "depends")	32.3
Willing to pay 25 cents <u>but not more</u>	7.5
Willing to pay more than 25 cents per person per year	24.9

Note: Actually, 91.8 percent of the 33.9 percent who thought that spending needs to be increased said "yes" to the 25 cent question and only 3.5 percent of them volunteered the "depends" response.

Actually, some 43.7 percent of all respondents said that they thought that the spending level was "just about right" and 10.0 percent felt that it ought to be decreased. Among those who asserted that they would be willing to pay more than 25 cents per person per year in additional to the level of spending indicated in the question,

1. 31.7 percent expressed their willingness to "spend any amount necessary",
2. and for all others, the average amounted to \$5.73 per person in addition to the 25 cents already agreed upon,
3. therefore resulting in an "average" willingness to pay, for 24.9 percent of the sample, just about \$6 per household/family person per year,
4. and this, of course, is in addition to the postulated 56 cents per person reflected in the formulation of the question.

Some Implications

A simple arithmetic exercise is not altogether without merits. Assuming the data of Table 30 and using a "standard" of 1 million households, the following might be said:

1. Of 1,000,000 households, 323,000 would be willing to pay at least 25 cents per person per year in additional civil defense funding.
2. 75,000 households in all would be willing to pay 25 cents per person but not more,
3. and 249,000 would be prepared to pay more than 25 cents, actually, \$5.73 on the average. Those who said that they would be willing to pay "any amount necessary" (not included in the calculation of the average) can certainly be assumed to be willing to pay the average, that is \$5.73 per person.
4. There are, on balance, about 2.8 persons per household.

Table 31 translates this information and these assumptions into dollar amounts as a very crude, but not irrelevant, indicator of what increments in civil defense funding could come about if only those who explicitly express their willingness to contribute were actually in a position to add to the program funding.

Table 31.

ADDITIONAL CIVIL DEFENSE FUNDING PER MILLION HOUSEHOLDS

<u>Funding source</u>	<u>Dollar Amount</u>
Those willing to pay 25 cents but not more	52,500
Those willing to pay \$5.73 on the average	3,994,956
<hr/> Total per year per million households	<hr/> 4,047,456

If one therefore could imagine, or actually configure, a program whereby Americans would be in a position to "contribute" to civil defense funding somehow directly, such additional funds would tend to amount to about \$4 per household/family under the simple premises of this exercise. Such a program, of course, is quite imaginable though its adoption would not seem likely even were it proposed to the Congress: for instance, much like "checking off" a modest political contribution on income tax forms, it would seem possible to provide for a "check-off" (up to some modest amount per person such as \$5 or \$7 or even \$10) to allocate money for civil defense purposes.

Anything of this sort, of course, is most unlikely to happen or even be recommended to Congress for consideration: in that setting then, the data merely provide an insight into the nation's preference for the funding of programs to protect people against the hazards of nuclear war.

Shifting Funds

The respondents, having been asked about their willingness to pay more for civil defense programs were also questioned about the possibility of reallocating existing revenues to provide for enhanced civil defense funding.

1. 46.1 percent expressed themselves in favor of such an idea
2. 6.7 percent volunteered a "depends" response (and mostly said, thereafter, that it would make sense only if they could be sure that such money would be actually used for civil defense purposes and how it would be used)

3. 34.2 percent did not consider this a very good idea at all.

From which programs should such reallocation take place? The question was asked of those respondents who expressed themselves favoring such funding shifts (N=842).

1. 22.8 percent mentioned defense spending as a possible target for shifting some funds into civil defense programs
17.9 percent referred to defense spending in general
2.3 percent mentioned the production of nuclear weapons
1.5 percent referred to "weapons and arms" in more general terms, and
1.1 percent to SDI (generally, using the term "Star Wars")
2. 12.9 percent would not object to the idea for reallocating some welfare funds (11.4 percent) or funds from other social programs (1.5 percent)
3. 3.8 percent would cut foreign aid to provide additional money for civil defense
4. 3.7 percent would reduce the salaries of "overpaid politicians" for this purpose
5. 1.5 percent would decrease NASA's appropriations.

There are occasional mentions of other budget categories but these are so few as to be hardly worth mentioning. Yet, there are also (similarly limited, but nonetheless interesting) references to programs that should not be affected by such postulated reallocations of funds: education, human and health services programs, social security, social and welfare programs).

Increased Funds for Civil Defense?

In the context of questions about the desirability to "increase" or "decrease" funding for active defense systems and arms control programs, the item concerning civil defense funding was, in effect, repeated. But here the opportunity to say that the "funding was about right" was not offered the respondents, nor were they reminded of how much was being spent.

The results turn out to be rather different, perhaps due to the "forced nature" (increase? decrease?) of the alternative

responses built into the question wording; or it may well be, that the answers are contextualized more: they appear, to repeat, in a series of questions about what had been previously in the report identified as "damage limiting systems": arms control measures, SDI, ABMs and civil defense.

Table 32.

INCREASE OR DECREASE SPENDING ON DEFENSE SYSTEMS?

<u>System</u>	<u>Increase</u>	<u>Keep Same</u>	<u>Decrease</u>
Arms control programs	68.2	10.7	13.7
Civil defense	67.5	16.0	11.2
SDI	54.0	12.7	24.5
ABMs	50.4	16.0	24.5

At this time, and without further careful analysis, it is quite difficult, even impossible, to explain why in a prior query only 33.9 percent of the respondents argued that civil defense funding should be higher than it has been and over 44 percent believed it "to be about right" while in this probe almost 68 percent, twice as many, favor "increased" spending for civil defense. The former question was raised in the course of the first part of the interview (N=1595) while the latter one in the second part only (N=1398). But there is no way in which this could account for the dramatic difference, a doubling of the percentage who favor spending more for civil defense.

But some speculations are, indeed, in order. First asked, the respondents were provided with an approximate amount of money being spent on "civil defense" programs. And they were also given an opportunity to say that the amount "is just about right." Furthermore, the question was phrased in terms of "preparedness" programs against the danger of nuclear war.

In the second segment of the interview, the question was somewhat different on three counts: the respondents were asked whether civil defense spending should be increased or decreased, and they had to volunteer the response that civil defense investments should "remain about the same." Second, the question was phrased in terms of "protecting" people against nuclear war rather than with respect to "preparedness" measures. Finally, it was raised in the context of other damage limiting systems, and was asked actually after an item

requesting information as to whether spending should be increased or decreased for anti-missile missile programs.

Indeed, if many people who responded initially that civil defense spending was "just about" right, they may well have not been saying that it was "quite right." In fact, many may have thought that "some more" needs to be invested although not much more, and the "about" right response would have appeared as coming closest to their view.

This possibility is strongly supported by the evidence: 62.2 percent of those who initially said that the level of spending was about right (609 respondents among those who answered both parts of the questionnaire) shifted to say that spending "ought to be increased" when asked subsequently and when the question referred to "protecting" people rather than to "preparedness" measures. And of those who originally said that funding should be decreased, 146 respondents, some 30.8 percent said later on that it ought to be actually increased. And finally, of the 158 respondents who, in the first part of the interview, were noncommittal ("don't knows"), 55.7 percent subsequently favored increased spending on programs to "protect people" against nuclear war.

But, of course, further analysis of the data may shed yet other lights on this interesting, and undoubtedly somewhat puzzling, result.

XVIII. HIGHLIGHTS

1. Civil defense, above all, means preparedness and since a more structured question on civil defense objectives reveals that high importance is attached to preparedness against natural and technological as well as attack hazards, the data indicate a rather comprehensive perspective on the part of the public.
2. Providing warning of an impending danger and information to the public on the basis of which prudent protective or evasive measures can be taken are, at the same time, the two most important goals of emergency management programs: thus it is not so much what citizens expect that the Government, through its civil defense programs, would "do everything" for people; rather, there is an expectation that relevant information, if provided, would lead to appropriate actions.
3. Nuclear war remains a possibility. In effect, Americans tend to think that it is just about as likely to happen, in some otherwise (in this study) unspecified future, as not.
4. Over 70 percent of Americans are convinced that they live in areas likely to be an enemy target should nuclear war come.
5. Since most people seem to continue thinking that there would be at best only a few hours of warning time, and even more of them tend to believe that "evacuation" of potential target areas would not allow enough time in which to actually evacuate, it appears that public views remain, to a significant extent, locked on the idea of a "sudden", "out of the blue" type of an attack.
6. All protective program options (fallout shelters, blast shelters, relocation/evacuation) are seen as enhancing the possibility of survival in a nuclear conflict. In fact, such protective postures, by implication, would about double survivability.
7. Yet, even the best public estimates of survivability imply that some 40 - 50 percent of our people would not survive and in a "next week's" conflict (without further development of civil defense programs) some 73 percent would not be expected to survive.

8. The basic and strong support for civil defense measures, however, also suggests that even such modest enhancements of survival chances are seen by the people as being eminently worthwhile.
9. The idea of using private home basements as shelters not only for the immediate residents themselves but for others remains one which people approve.
10. Among those with basements, roughly one half of the sample, about 1 in 3 gave some thought to the possibility of using their basement as a shelter; a large majority would allow the use of their basement to shelter non-household, non-family members as well.
11. Many people would evacuate spontaneously should they reach the conclusion that a situation exists that is likely, in very short order, to escalate into a nuclear war.
12. Since most people by far are convinced that there may well exist some circumstances under which the President would urge or recommend evacuation of high risk areas, it is not surprising to find that the development of evacuation plans is robustly favored, and that people, in predominant numbers, would tend to comply with a Presidential recommendation to evacuate.
13. The actions of one's neighbors, at the same time, would have some, if not potent, effect. In general, the effect is in the direction of whatever neighbors are seen as doing: if neighbors are noticed evacuating, one's intentions are strengthened; if neighbors are seen as staying put, the intention to evacuate is somewhat weakened.
14. People do not agree that civil defense programs against nuclear war are unneeded because such a war would never come anyway, or that such programs would not save enough lives to make any sense at all. Indeed, 80 percent of the people do endorse the idea that "many" lives might be saved that otherwise would be lost, that civil defense programs make sense.
15. Such attack preparedness programs are not seen as increasing anxiety (though many people, not an insignificant minority, think so), or induce "complacency" by making a nuclear war "more acceptable" (though a good minority think so), or be

provocative to the Soviets and so increase the chances of the dreaded event.

16. Nor do many people endorse the idea that arms control negotiations and possibilities of reaching some agreements would be jeopardized by civil defense measures.
17. Americans do not endorse the possibility of a U. S. first strike no matter what the provocation; but they also do not accept the possibility of yielding to nuclear blackmail and do favor the use of nuclear weapons in retaliation following an attack (both in general, and more specifically, an attack on the American homeland).
18. Most people do not insist that arms control agreements with the Soviets would be in the interest of national security only if the United States could have military superiority (though about 4 in 10 of the respondents endorse such a "condition" for arms control); the large majority (some 8 in 10) are in favor of arms control measures provided parity between American and Soviet military might results, or is maintained, and most, 2 out of 3, support the mutual withdrawal of intermediate range missiles from Europe. Of course, this also implies that many of the respondents who would prefer United States superiority would also "settle for relative parity.
19. About 4 in 10 appear to have heard about "nuclear winter", but the overall information level as to what the "nuclear winter" idea is all about is quite low.
20. The findings suggest the desirability to respondents of a mixture of damage limiting systems: arms control agreements to limit the numbers and types of weapons that could be used, SDI types of systems to limit the number of weapons likely to reach the homeland once they were launched, and civil defense programs to help protect people against those weapons that would get through anyway.
21. Willingness to update one's training relevant to emergency management or to receives such training is very high; and so is the willingness to volunteer if needed. On the average, people say that they would be prepared to spend some 122 hours per year volunteering, that is, just a little over 2 hours per week.

22. The Federal Government is believed to have the main responsibility for attack preparedness measures and programs. But significant numbers of Americans assign some responsibility also to community volunteers and to the private sector as well as to all other levels of government: local, county, and state.
23. Peacetime preparedness programs are believed to contribute to the nation's capability to cope with a nuclear war; but even more believe that attack preparedness programs facilitate the enhancement of capability to deal with peacetime hazards.
24. Americans favor increased spending for civil defense. Many would be willing to pay an additional 25 cents per person per year, and a majority of those (though only 24.9 percent of all respondents), would, in turn, actually be willing to pay almost \$6 per year per person.

The 1987 findings are basically quite similar, and often just about identical, to the results of the earlier, 1978, inquiry and, for that matter, to the data from limited questions included in three Gallup surveys in 1982. In turn, the 1978 data are, for the most part, much like the results of antecedent studies of the early 1970's and of the decade of the 1960's. Except for a consistent (and similarly time invariant) strong opposition on the part of roughly around 10 percent of Americans, efforts to "protect people and property against the hazard of nuclear war", as stipulated by the Congress in the original Civil Defense Act of the days of President Truman - a stipulation itself never rescinded, remain favored and are supported by majorities which rarely fall below two thirds of respondents and are usually even more robust than that.

Results from surveys of public perceptions, attitudes and sentiments, of course, cannot and should not somehow be seen as dictating or even mandating national policy. Many other considerations are relevant, appropriate, and sometimes perhaps even "overriding". Yet, it is certainly quite prudent to take expressions of public preferences and views into account along with all other information which leads to policy recommendations, to their evaluation, to their adoption and, of course, implementation.

PART II.
SOME PEACETIME HAZARDS

XIX. INTRODUCTORY REMARKS

When the respondents were asked about the prior emergency or disaster related training and education, it is obvious that many of the responses are even more applicable to peacetime hazards, natural disasters or technological threats than they are to their possible relevance in face of the threat of a nuclear war. Thus first aid training or CPR training serve as prime examples.

Similarly, when the interviewees were asked whether they would be willing to update their training or to receive training, the issue was not phrased only with respect to attack preparedness training programs, but much more generally.

Nor were people asked whether they would be willing to give some of their time in volunteering only in relation to war preparedness aspects of civil defense.

In other words, some of the findings already reported in the previous Part of the report have direct applicability in the "all hazards" or "comprehensive emergency management" context since the answers were elicited in this broader sense. The data were included in the part on national security issues because the wording always incorporated also a mention of a "nuclear war hazard" and was not limited to peacetime dangers only.

But there were quite a few probes which inquired into some salient aspects of public concerns with peacetime hazards. The Part of the report then focuses on these questions: the reported exposure to several hazards, the expectation that one's community might undergo a particular emergency (within a 5 year span), the effectiveness of emergency preparedness programs as perceived by the respondents, and the allocation of responsibility for managing peacetime hazards. There were also a few items which bear on the propensity of respondents to expose themselves to certain risks on their own, and on their modes of managing some risks.

XX. SOME EXPERIENCES WITH EMERGENCIES

Actually, 26.6 percent of the interviewees answered affirmatively when asked:

"Have you ever had an experience with a disaster such as a tornado, flood or earthquake?"

A follow-up question sought to ascertain

"What kind of disaster was it?"

The basic results are presented in Table 33.

Table 33.

REPORTED EXPOSURES TO DISASTERS

<u>Type of Disaster</u>	<u>Percent</u>
Tornado	10.7
Earthquake	6.8
Flood	6.0
Hurricane	4.9
Fire	0.4
Toxic spillage	0.2
Other	1.2

Note: The "list" was not read to the respondents. Those who had claimed exposure, 26.6 percent, had to identify the emergency themselves.

In this study, time limitations made it impossible to probe in detail when and where such experiences occurred, or what, if any, may have been the impact on the respondents, their family members, relatives, friends or neighbors. This is, of course, an important limitation. Yet, for the purposes of this inquiry, the question was asked primarily to be able, in subsequent analysis, to make comparisons between preparedness attitudes and actions of those who had undergone some exposure to a major disaster and those who have not. It would certainly be desirable to have additional data on the when's and where's and on the consequences of the exposure. The difficult choices as to what to include and what not in a time-limited inquiry

led, in this instance, to the decision not to pursue the details of the reported exposures.

In fact, of course, there were two items included which could not be omitted due to their obvious relationship to possible programs of attack preparedness: as has been already reported (Section VII. ON EVACUATION), the interviewees were also asked whether they ever had to evacuate their place of residence and/or whether they ever found themselves in a position of providing temporary housing for evacuees. It will be recalled that 6.6 percent claimed to have had to evacuate their residence (at least once), and 7.9 percent sheltered evacuees in their homes (at least once).

XXI. PERCEIVED LIKELIHOOD OF DISASTERS

To acquire some insight into the pattern of risk perceptions, the respondents were asked to say whether particular disasters were "likely" or "unlikely" to threaten their community within the next five years. When respondents used such terms as "very likely" or "very unlikely" or, for that matter, when they said "never", the answer was recorded as such. A likelihood index was constructed in such a way as to produce a value of 1 (certainty) of all respondents who had provided the "very likely" response, and 0 (zero), of all who had either said that a particular disaster was "very unlikely" or that it would "never" occur in their community.

Table 34.

LIKELIHOOD OF DISASTERS WITHIN FIVE YEARS

<u>Type of Disaster</u>	<u>Likelihood</u>
Tornado	.513
Spillage of toxics	.448
Flashflood	.442
Flood	.397
Hurricane	.365
Earthquake	.347
Dam failure	.283

Thus, in an overall sense, the people across the nation do feel threatened by the possibility of major catastrophes in the course of the next five years. But, of course, the results in their current form mask important differences since they do not in any way relate to the actual possible distribution of the hazards across the land: flash floods or floods, for instance, are simply not possible "everywhere" any more than are "dam failures". The risk of earthquakes, hurricanes or tornadoes, in turn, is quite different throughout the country and may well range from non-existent (or nearly non-existent) to extremely high.

While only preliminary indications can be given in this initial report, some patterns reflected in the interview data are worth noting since they are indicative of the fact that

Americans do recognize different risk levels depending on where they live.

1. While the risk of a "tornado" has a likelihood value of .513 in the nationwide data aggregation, it has a value of .788 in Oklahoma, .786 in Nebraska as well as in Minnesota, .771 in Kansas, .727 in Indiana, .726 in Illinois as well as in Georgia, .702 in Alabama and .692 in Missouri.
2. The perceived threat of a toxic chemical spillage is far higher than the national average in such states as Arizona, California, Florida, Michigan, New Jersey, New York, Ohio, Pennsylvania, South Carolina or West Virginia.
3. Reports from respondents in Alabama, Iowa, Louisiana, Mississippi, Missouri, South Carolina, Texas and Virginia are among those which indicate high danger of flash floods - or, at least, significantly higher risk than the national average suggests.
4. Floods, in turn, are mentioned as likely by disproportionately large numbers of respondents in such states as Connecticut, Iowa, Kentucky, Louisiana, Mississippi, New Jersey, Oklahoma, South Dakota.
5. In many of the Northeastern states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York), in the South (Florida, Louisiana, Maryland, both Carolinas and Texas) the perceived likelihood of hurricanes exceeds the national average by far.
6. While the nationwide "earthquake threat" has a likelihood of .347, the index is .586 in California, .565 in Kentucky, .482 in Missouri and .483 in Utah as preliminary examples.

XXII. PEACETIME NUCLEAR ENERGY

Perceived Dangers

Several hazards associated with peacetime use of nuclear energy were explored: a major power plant accident affecting the respondent's community; a major accident anywhere in the United States; a major accident involving nuclear waste; a possibility of a terrorist takeover of a nuclear facility; and a possible terrorist nuclear threat to a city or community. As was the case with items concerning natural and other technological peacetime hazards, the question was asked with respect to a five year time perspective. In terms of a likelihood index, the overall findings are presented in Table 35.

Table 35.

LIKELIHOOD OF PEACETIME NUCLEAR EMERGENCIES

<u>Type of Risk</u>	<u>Likelihood</u>
Nuclear plant accident affecting community	.372
Nuclear plant accident anywhere in the United States	.599
Accident involving nuclear waste	.606
<hr/>	
Terrorist takeover of nuclear plant	.382
Hostaging of a city/community by terrorists claiming to possess nuclear device	.456

It should not be surprising that a major accident near the respondent's community turns out to have the lowest likelihood of the hazards about which the question was asked: similar to other peacetime hazards, a major nuclear accident simply cannot affect any and all communities but basically only (or mainly) those that are located in the vicinity of a nuclear facility or downwind sufficiently close to be impacted by radiation should an accident occur. Further analysis will make it possible to determine how the risk estimate (likelihood of a major accident) varies dependent on the distance of the respondent's residence to the nearest nuclear power plant.

But the likelihood indices both for an accident involving nuclear waste and a major incident "somewhere" in the United

States are quite high. Undoubtedly, these concerns are affected by the Three Mile Island incident and, above all, by the much more recent major accident in the Soviet Union (Chernobyl). In the 1978 survey, a comparable index of a major plant accident yielded a value of .470 - not a low one, indeed, but substantially lower than the .599 of the 1987 inquiry.

Relatively high are also estimates of the possibility of terrorist actions involving nuclear energy or nuclear facilities. In the 1978 study, the possibility of a terrorist hostageing of an American community or city had a likelihood of .512, somewhat higher than in this 1987 study; a terrorist takeover of a nuclear facility, with an index of .470 in 1978 also seemed slightly more probable in the earlier study than in the most recent one where the index was .456.

Actually, the 1987 indices may all somewhat underestimate the risk perception of the public: responses that a given event was "very likely" (as well as "very unlikely") were recorded only when offered spontaneously by the respondents, whereas in the 1978 study, a card was presented to the interviewee with the fuller range of possibilities, ranging from "very likely" to "very unlikely".

Attitudes Toward Nuclear Power Plants

Some 32 percent of the respondents claimed to live within 50 miles of a nuclear power plant and most were able to provide the name of the facility: the accuracy of the response has not been validated as yet against actual names and locations of power plants. Of these respondents, 84.9 percent stated that the respective power plant was "in operation", while others said that it was under construction or was planned.

Among those living within a 50 mile radius of nuclear power plants, 24.4 percent said that they did receive information on how they would be warned and what to do in the event of an accident. Since current regulations provide for dissemination and availability of such information within a 10 mile radius and not out to 50 miles, the finding requires further analysis in terms of the distance, both claimed and actual, of the respondent's residence from the nearest nuclear power plant.

In Table 36 are summarized the findings as they reflect support for, or opposition to, nuclear power plants.

Table 36.

ATTITUDES TOWARD NUCLEAR POWER PLANTS

<u>Issue</u>	<u>Support</u>	<u>Opposition</u>
Construction of nuclear power plant within 50 miles*	19.4	69.9
Construction of new nuclear power plants	35.3	58.2
Continuing operation of existing nuclear power plants	49.6	35.7

Note: The asterisked item was asked only of those respondents who said that they did not live within 50 miles of a nuclear facility already.

Although more people favor continuing operation of nuclear power plants already in existence than are in opposition, there is much more opposition than support for the construction of new power plants - and even more so if the facility turned out to be within about 50 miles of the respondent's residence.

In all then, it is necessary to conclude that nuclear power plants are not seen, by most Americans, as an acceptable source of energy. People are somewhat willing to put up with the plants that are already operational, but the idea of new nuclear power plants is clearly not appealing. How different are respondents residing relatively close to existing power plants from those living elsewhere will require further analysis.

XXIII. EFFECTIVENESS OF EMERGENCY MANAGEMENT

Local and Federal Effectiveness

The respondents were asked to rate how effective was their community in dealing with disasters and emergencies. They were also asked to estimate the effectiveness of the Federal Government in this respect. Table 37 contains the aggregate data.

Table 37.

EFFECTIVENESS OF LOCAL AND FEDERAL EMERGENCY MANAGEMENT

<u>Rating</u>	<u>Local</u>	<u>Federal</u>
Excellent	9.7	4.6
Very good	27.4	21.1
Good	28.5	36.7
Fair	14.0	20.6
Poor	8.2	9.2
"DK", "No answer"	12.2	7.9
<hr/>		
Effectiveness index	.546	.476
<hr/>		

Note: The index was generated by assigning values of 1, .75, .5, .25 and 0 to the ratings. It would have a value of 1 if all rating responses were "excellent" and 0 if all had answered "poor".

The respondents thus have a somewhat better opinion of the emergency management capabilities at their community/local level than they hold about the Federal Government. The effectiveness questions were asked, to be sure, before any item regarding the threat of nuclear war appeared in the instrument, so that the answers reflect effectiveness estimates with regard to peacetime emergencies only.

The Idea of Self-help

A rating was also solicited in an effort to seek insight into public views on the possibility of self-help programs:

"A lot of communities have "self-help" groups that develop and carry out programs mostly on their own, without involvement or funding by the government. When it comes to emergency management, would you rate the idea of such self-help groups as excellent, very good, good, fair or poor?"

Table 38.

SELF-HELP IDEA RATED

<u>Rating</u>	<u>Percent</u>
Excellent	16.8
Very good	28.1
Good	32.7
Fair	11.3
Poor	3.7
"DK", "No answer"	7.5
<hr/>	
Index	.616
<hr/>	

The idea of self-help programs at the local level is quite appealing. This finding is, of course, also in accord with the fact that most people claim willingness to volunteer their services for disaster and emergency management programs, that most would be willing to update their training or become trained in skills related to disasters and emergencies, and that, second only to the need for warning, very high importance is attached to the desirability of Government providing information, in a disaster situation or under the threat of an emergency, so that people themselves know how to act.

XXIV. RESPONSIBILITY FOR EMERGENCY MANAGEMENT

In a previous section of the report (Section XIV. RESPONSIBILITY FOR PREPAREDNESS), it has been shown that

1. People assigned the main responsibility for wartime preparedness to the Federal Government,
2. but, at the same time, their views reflected the desirability of a mixture of responsibilities among governmental agencies at all levels and private individuals and the private sector as well.

Table 39 reflects public ideas about the distribution of responsibilities when it comes to peacetime hazards.

Table 39.

RESPONSIBILITIES FOR PREPAREDNESS AGAINST PEACETIME HAZARDS

<u>Responsibility</u>	Natural	Technological <u>Hazards</u>
Federal Government	42.6	60.3
State Government	42.5	40.8
County Government	25.8	28.1
Local Government	39.9	33.7
<hr/>		
Community volunteers	42.8	32.0
Private sector	23.2	34.0

The basic pattern is rather different for natural and technological risks. In terms of natural disasters, community volunteers, the Federal, State and local governments are seen as having the major responsibilities. But in comparison with the answers concerning technological hazards, and more especially, war preparedness programs, the role of the Federal Government, in relative terms, is quite a subdued one. To help cope with technological hazards, the Federal Government is considered to bear the main responsibilities with State Government and the private sector - the industrial and business community - in quite important though somewhat secondary roles. Yet, again, community volunteers as well as the local government (and, as is the case throughout, to a limited extent also the County government) are seen as having an important

share in the responsibility for emergency management. Nonetheless, the pattern shows less discrimination than one might expect, given the division of powers in the U. S. constitutional system. What may be reflected to a certain extent is a sense of reality in risk perception, recognizing those areas in which as a matter of responsiveness to emerging technological risks, as well as the traditional national security responsibilities, the Federal Government is expected to assume a major role.

XXV. ON PERSONAL RISK

Risk Taking

It would certainly be worthwhile to know in considerable detail what kinds of risks Americans accept voluntarily. In this study, an adequate inventory of risky activities could not be included. Hence, only a few items were selected mainly to be able to compare those who take some risks with those who do not in terms of their attitudes and actions with respect to disasters and emergencies. The distribution of responses is given in Table 40. in terms of percentages.

Table 40.

SOME RISK TAKING PATTERNS

<u>Activity</u>	<u>Regular</u>	<u>Occasional</u>	<u>No</u>
Use of tobacco	27.9	1.1	58.6
Use of alcohol	26.7	22.4	38.1
Snow skiing	14.5	2.3	70.8
Riding motorcycles	10.7	2.9	73.9
Mountain climbing	5.0	2.5	80.0

Further analysis will show how many people, in all, are engaged in any of these activities and, of course, also how many are involved in more than one of them. To what extent "use of alcohol" might be really counted as "risk taking" is not exactly clear since there were no follow-up questions regarding drinking habits: occasional moderate consumption of alcohol might not very easily qualify as putting people at risk, or at least not at relatively high risk.

Some Protective Actions

With respect to several alternatives, the study also sought to determine what protective actions, if any, people tend to take.

Table 41.

PROTECTIVE ACTIONS

<u>Type of Action</u>	<u>Regular</u>	<u>Occasional</u>	<u>No</u>
Using seat belts	69.2	5.8	12.6
Daily exercise	54.1	8.6	24.4
Yearly physical examination	52.1	4.5	31.0
Vitamins, health foods	49.3	6.2	32.1
Special insurance*	20.1	2.9	64.4

Note: * Such as flight insurance, and the like.

Again, the tabulation provides, at this time, only raw data: how many people overall are involved needs to be further determined; and how many are engaged in more than one such activity also needs to be established, as does the relation of these measures to risk taking.

Some Protective Devices and Measures

The respondents were also asked about some specific protective devices and measures.

Table 42.

SOME DEVICES AND MEASURES

<u>Device, Measure</u>	<u>Percent</u>
Smoke detector(s)	87.5
First aid kit	84.1
Fire extinguisher(s)	69.5
Household inventory	63.8
Flood insurance	29.8
Burglar alarm	19.2
Radiation detection device	1.9

Some of these claims (smoke detectors, fire extinguishers) seem quite high. There is, however, no reason to question the basic face value of the responses even if a scattering of them reflected more of an "intention to have" or "plans to acquire" rather than already existing realities. That some 64 percent asserted they maintained an inventory of household belongings "for insurance or recovery purposes" may also seem somewhat surprising but a check on experiences of major insurers may shed light on this finding and, if indirectly, help validate it as well as the other findings in this regard.

XXVI. HIGHLIGHTS

1. More than 1 in 4 Americans have reported some direct experience with at least one major disaster or emergency.
2. The likelihood of some catastrophic occurrence in, or near, one's community of residence within the next five years is seen as fairly high, with concerns over tornadoes and spillages of toxics yielding the relatively highest estimates.
3. Yet, as might be expected, the perceived risks are highly variable dependent on the respondent's residence. In this regard, it is indeed true that some states are more likely than others to experience an earthquake with likelihood indices which are high compared with the national average or with less vulnerable states. Similarly, in the hurricane belt or in states known to have experiences with tornadoes, the index is much higher than it is nation-wide or in states with no such prior exposures.
4. There is a rather high likelihood, as perceived by the public, of a major nuclear power plant accident within five years, and somewhat more so, of an accident involving nuclear waste material.
5. Opinions regarding nuclear power plants certainly do not favor the construction of new facilities - and definitely not within some 50 miles of the respondents' residence; but continued operation of existing facilities has more supporters than it has opponents.
6. Some real threat is seen of a possible abuse of nuclear power by terrorists within this five year time span; but the 1987 likelihood indices are somewhat, and consistently, lower than were the 1978 evaluations (which inquired into such likelihood between then and "about" 1985).
7. Local emergency management efforts are considered to be more effective than Federal efforts; but neither produce such high indices as to make emergency management personnel particularly comfortable.
8. The idea of self-help groups to plan for, and deal with, disasters and emergencies tends to be strongly endorsed.

9. If the Federal Government is viewed as having the focal responsibility for war preparedness measures, it is also considered to have the dominant responsibility for peacetime technological hazards.
10. Community volunteers, believed to have important roles to play in face of peacetime as well as war-related hazards, are especially important in relation to natural disasters - even somewhat more so than the Federal Government (or governments at other levels, for that matter).
11. The private sector, defined by the respondents as least responsible for measures to deal with attack preparedness and natural disasters, is assigned considerable responsibility - along with the Federal and State governments - in relation to technological risks.

P A R T I I I .
HIGHLIGHTS OF POLICY IMPLICATIONS

XXVII. SOME POLICY IMPLICATIONS

All policy decisions have at least one characteristic in common: they are quite complex as to the factors which need to be taken into account.

In consequence, no single study, or even several studies, can provide sufficient information, knowledge and wisdom - that crucial ability to use information and knowledge in a worthwhile manner - on which to base policy choices. In turn, however, all such studies can, should, and sometimes do, generate relevant input which the policy maker would ignore only at some risk of arriving at a poorer choice than would seem possible given such information and insight.

In suggesting some possible policy implications of this study, there is no claim, either explicit or implied, that all the clusters and configurations of relevant decision factors have, or can, be taken into account. The brief outline of several such implications serves mainly to indicate to the policy maker that these types of considerations should, perhaps, be also incorporated into the policy making process as an additional, and definitely not trivial, input.

1. The findings sustain the conclusion that there exists a very wide, and rather time-invariant, riverbed of public support for programs to help protect the nation's people against the hazards of nuclear war. Thus policies which take the form of attack preparedness programs cannot but find a friendly reception on the part of a large majority Americans.
2. Such efforts are not seen as somehow "competing" with efforts to reach arms control agreements, or with programs to help develop active defenses and even deploy such systems when possible. Thus policies aiming at a mix, the technical nature of which people are unable to judge, of various "damage limitation" measures find a particularly high resonance in the nation's body politic: the mix of arms control agreements, active defense measures, and passive defenses of the "civil defense" variety.
3. Policies to allocate increased funds for programs to help protect the people against a possible nuclear attack are quite clearly acceptable, while policies which would induce decreased funding, or even discontinuation of such efforts, are not. The lack of highly organized and articulate interest groups in support of civil defense is in no way inconsistent with the levels of support found in this and all previous surveys. The public considers this an area

of government responsibility which they assume the government is attending to; they avoid focusing on it because the possibility of a nuclear holocaust is so distinctly abhorrent; and there is no organized economic group with substantial prospects of substantial financial gain.

4. Faced with the risk of many natural and some significant technological hazards, concepts involving "comprehensiveness" of emergency preparedness, and programs germinated from such conceptualizations are considered as highly valuable and sensible. Thus policies seeking "all hazards" capabilities, but in no way neglecting the possible threat of a nuclear confrontation or conflict, are clearly supported by the public.
5. Key arguments against civil defense in its attack preparedness aspects simply lack public credibility. Efforts to alter the views of consistent and vocal critics, whose adherents remain only around 10 percent, are likely to be altogether futile. Thus programs to counter such arguments do not appear to be the best use of limited human and fiscal resources. Verbal and articulate though they have been, opponents have not altered the basic public predisposition to desire civil defense protection. Public support can, and should, be simply taken for granted and public information policies based on this premise offer more promise than do approaches involving arguing about the arguments.
6. There exists a formidable reservoir of Americans willing to acquire knowledge and skills relevant to emergency management, and a similarly massive reservoir of potential volunteers. Thus policies which help provide training and educational opportunities as well as those which could usefully and meaningfully avail themselves of volunteer work are not likely to fail. Rather, the national capabilities of dealing with disasters and emergencies of all kinds can be greatly enhanced. In other words, programs involving "self-help", if with appropriate Government help, would seem highly promising.
7. The sharing of responsibilities for disaster and emergency preparedness and management among Federal, State, county and local governments as well as with private sector and community volunteers represents a viable mix. Policies which encourage such sharing of responsibilities, even while maintaining the Federal Government's "lead" responsibility, reflect the sentiments of the nation's public.

APPENDIX A
QUESTIONNAIRE

CIVIL DEFENSE AND EMERGENCY MANAGEMENT SURVEY
May, 1987

Part 1

University of Pittsburgh
University Center for
Social and Urban Research

SAMPLE ID NUMBER: _____
FIPS CODE: _____
INTERVIEWER ID: _____
CASEID: _____

Hello, my name is _____ and I'm from the University of Pittsburgh. We're conducting a national survey concerning emergency disasters, and civil defense. This telephone number has been randomly selected to be part of our sample. Have I reached a private residence?

IF NOT RESIDENTIAL, POLITELY TERMINATE INTERVIEW

We need to be sure that we give every adult a chance to be interviewed in this study. Thinking now only of the adults in your household--that people 18 years of age or older -- may I speak to the adult who has the next birthday?

IF NOT AVAILABLE: When can I reach _____?

IF APPROPRIATE: REPEAT FIRST PARAGRAPH FOR NEW RESPONDENT

We consider your responses extremely important in helping us to establish emergency preparedness measures for our nation. All of your answers will be held in strict confidence and will be reported in such a way that no one in your household can be identified.

RECORD TIME INTERVIEW BEGINS: _____ AM
PM

1. Have you ever had an experience with a disaster such as a tornado, flood or earthquake?

- ☐ 1. Yes (ASK A AND 2)
- ☐ 2. No (SKIP TO 3)
- ☐ 8. Don't know (SKIP TO 3)

A. What kind of disaster was it? (DO NOT READ RESPONSES)

- ☐ 0. Tornado
- ☐ 1. Flood
- ☐ 2. Flashflood
- ☐ 3. Hurricane
- ☐ 4. Earthquake
- ☐ 5. Fire (PROBE FOR KIND OF FIRE)

-
- ☐ 6. Toxic chemical accident
 - ☐ 8. Other
(SPECIFY) _____
 - ☐ 7. Inappropriate

2. Have you (or your family) ever evacuated your home as a result of a disaster? (RECORD NUMBER OF TIMES IF OFFERED SPONTANEOUSLY)

- ☐ 1. Yes
- ☐ 2. No
- ☐ 7. Inappropriate
- ☐ 8. Don't know

Number of times _____

3. Have you ever provided temporary housing in your home for other people who had to evacuate their place of residence? (RECORD NUMBER OF TIMES OFFERED SPONTANEOUSLY)

- ☐ 1. Yes
- ☐ 2. No
- ☐ 8. Don't know

Number of times _____

4. How likely is it that within the next five years your community will be subjected to..... Would you say it's likely or unlikely?

USE CODES 1, 3, 5, AND 6 ONLY IF SPONTANEOUSLY MENTIONED BY RESPONDENT

1. Very likely.....1 (SPONTANEOUS)
2. Likely.....2
3. 50-50 chance.....3 (SPONTANEOUS)
4. Unlikely.....4
5. Very unlikely.....5 (SPONTANEOUS)
6. Never will happen.....6 (SPONTANEOUS)
8. Don't know.....8

VERY 50-50 UN- VERY UN-
LIKELY LIKELY CHANCE LIKELY LIKELY NEVER DK

A. A major earth-
quake? 1 2 3 4 5 6 8

How about a

B. A major nuclear power
plant accident? 1 2 3 4 5 6 8

C. A dam failure? 1 2 3 4 5 6 8

D. A tornado? 1 2 3 4 5 6 8

E. A flood? 1 2 3 4 5 6 8

F. A hurricane? 1 2 3 4 5 6 8

G. A flashflood? 1 2 3 4 5 6 8

H. A toxic chemical
accident? 1 2 3 4 5 6 8

5. How likely is it that within the next five years will happen anywhere in the United States? Would you say that it is likely or unlikely?

USE CODES 1, 3, 5, AND 6 ONLY IF SPONTANEOUSLY MENTIONED BY RESPONDENT

1. Very likely.....1 (SPONTANEOUS)
2. Likely.....2
3. 50-50 chance.....3 (SPONTANEOUS)
4. Unlikely.....4
5. Very unlikely.....5 (SPONTANEOUS)
6. Never will happen.....6 (SPONTANEOUS)
8. Don't know.....8

VERY 50-50 UN- VERY UN-
 LIKELY LIKELY CHANCE LIKELY LIKELY NEVER DK

A. A major nuclear power plant 1 2 3 4 5 6 8 accid

How about

B. A terrorist takeover of a nuclear power plant? 1 2 3 4 5 6 8

C. A major accident involving radio-active waste? 1 2 3 4 5 6 8

D. A group of terrorists claiming to have a nuclear weapon and holding a city/community hostage? 1 2 3 4 5 6 8

6. How well does your community deal with disasters and emergencies? Would you rate their effectiveness as excellent, very good, good, fair, or poor?

- _____ 1. Excellent
- _____ 2. Very good
- _____ 3. Good
- _____ 4. Fair
- _____ 5. Poor
- _____ 8. Don't know

7. How well does the Federal Government deal with disasters and emergencies? (Would you rate their effectiveness as excellent, very good, fair, or poor?)

- _____ 1. Excellent
- _____ 2. Very good
- _____ 3. Good
- _____ 4. Fair
- _____ 5. Poor
- _____ 8. Don't know

8. A lot of communities have "self-help" groups that develop and carry out programs mostly on their own, without involvement or funding by Government. When it comes to emergency preparedness, would you rate the idea of such self-help groups as excellent, very good, good, fair, or poor?

- _____ 1. Excellent
- _____ 2. Very good
- _____ 3. Good
- _____ 4. Fair
- _____ 5. Poor
- _____ 8. Don't know

9. Is there a nuclear power plant within 50 miles of your home?

- ☐ 1. Yes (ASK A, B, C AND D)
- ☐ 2. No (SKIP TO 10)
- ☐ 8. Don't know (SKIP TO 10)

A. About how far is it from your home?

_____ (miles)

☐ 97. Inappropriate

B. Is that plant in operation or under construction?

- ☐ 1. In operation
- ☐ 2. Under construction
- ☐ 3. Other
(SPECIFY) _____
- ☐ 7. Inappropriate
- ☐ 8. Don't know

C. What is the name of the facility?

☐ 97. Inappropriate

D. Have you received any information about how you would
warned and what actions you should take in the event _____ of a nucl
power plant accident?

- | | |
|--|-------------------|
| <input type="checkbox"/> 1. Yes ----- | -----(SKIP TO 11) |
| <input type="checkbox"/> 2. No | |
| <input type="checkbox"/> 7. Inappropriate | |
| <input type="checkbox"/> 8. Don't know ----- | |

10. If a nuclear power plant was built within a 50-mile radius of y
home, would you favor or oppose it?

- ☐ 1. Strongly favor (SPONTANEOUS)
- ☐ 2. Favor
- ☐ 3. Neither (SPONTANEOUS)
- ☐ 4. Oppose
- ☐ 5. Strongly oppose (SPONTANEOUS)
- ☐ 7. Inappropriate
- ☐ 8. Don't know

11. Do you favor or oppose the continuing operation of existing nuclear power plants?

- ☐ 1. Strongly favor (SPONTANEOUS)
- ☐ 2. Favor
- ☐ 3. Neither (SPONTANEOUS)
- ☐ 4. Oppose
- ☐ 5. Strongly oppose (SPONTANEOUS)
- ☐ 8. Don't know

12. Do you favor or oppose the construction of new nuclear power plant

- ☐ 1. Strongly favor (SPONTANEOUS)
- ☐ 2. Favor
- ☐ 3. Neither (SPONTANEOUS)
- ☐ 4. Oppose
- ☐ 5. Strongly oppose (SPONTANEOUS)
- ☐ 8. Don't know

13. Could you please tell me what civil defense means to you?

14. I'm going to read some things that might be considered goals of ci defense. Please tell me how important a goal each one is, using a scale 0 to 5, with 0 being not important at all and 5 being extremely importa

- A. Providing protection in case of nuclear war _____
- B. Providing information so people can help themselves respond to emergencies _____
- C. Providing protection in case of natural disasters _____
- D. Warning the public of impending danger _____
- E. Providing protection in case of conventional war _____
- F. Evaluating community disaster plans _____
- G. Contributing to the prevention of nuclear war _____
- H. Providing protection in case of technological hazards (such as nuclear power plant accidents or chemical spills) _____
- I. Providing assistance to communities hit by disaster(s) _____

15. How likely do you think it is that we're in for a big World War-- where nuclear weapons would be used? Would you say it is likely unlikely?

- _____ 1. Very likely (SPONTANEOUS)
- _____ 2. Likely
- _____ 3. 50-50 chance (SPONTANEOUS)
- _____ 4. Unlikely
- _____ 5. Very unlikely (SPONTANEOUS)
- _____ 6. Never will happen (SPONTANEOUS)
- _____ 8. Don't know

16. In your judgment, how much warning time would there be if a nuclear were to occur? (DO NOT READ RESPONSES)

- _____ 1. No time
- _____ 2. Minutes (15-30)
- _____ 3. Hours
- _____ 4. About a day
- _____ 5. Two to three days
- _____ 6. Four days to a week
- _____ 7. A week or more
- _____ 8. Don't know

RECORD TIME: _____

17. In case of nuclear war, do you think that the danger of your area be a target is high, medium or low, or none at all?

- ☐ 1. High danger (ASK A)
 - ☐ 2. Medium danger (ASK A)
 - ☐ 3. Low danger -----
 - ☐ 4. No danger at all -----
 - ☐ 8. Don't know -----
- (SKIP TO 18)

A. What in your area makes it a target?

RECORD AS MANY ANSWERS AS RESPONDENT GIVES. IF RESPONDENT GIVES ANSWER WHICH DOES NOT INDICATE A FUNCTION, PROBE. FOR EXAMPLE, RESPONDENT SAYS "JONES," PROBE FOR "JONES AIR FORCE BASE"

☐ 97. Inappropriate

18. Do you think that plans to deal with peacetime disasters, 1 tornadoes or nuclear power plant accidents, would be helpful in coping w a nuclear attack, should it ever take place?

- ☐ 1. Yes (ASK A)
 - ☐ 2. Depends (PROBE AND ASK A)
-

- ☐ 3. No (ASK B)
- ☐ 8. Don't know (SKIP TO 19)

A. In what way might they be helpful?

☐ 97. Inappropriate

B. Why wouldn't they be helpful?

☐ 97. Inappropriate

19. If a nuclear war started next week, how good are the chances that people in your area would survive? Would you say the chances would be very good, fairly good, about 50-50, fairly bad, or very bad?

- ☐ 1. Very good
- ☐ 2. Fairly good
- ☐ 3. 50-50 chance
- ☐ 4. Fairly bad
- ☐ 5. Very bad
- ☐ 6. None (SPONTANEOUS)
- ☐ 8. Don't know

20. How good would the chances be that people in your area would survive if they were in blast shelters, that is shelters that protect against blast heat and initial radiation, in addition to providing some protection against fallout? Would the chances be very good, fairly good, about 50-50, fairly bad, or very bad?

- ☐ 1. Very good
- ☐ 2. Fairly good
- ☐ 3. 50-50 chance
- ☐ 4. Fairly bad
- ☐ 5. Very bad
- ☐ 6. None (SPONTANEOUS)
- ☐ 8. Don't know

21. How about if they evacuated to areas considered to be much less lik targets of a direct attack? (Would you say their survival chances would very good, fairly good, about 50-50, fairly bad, or very bad?)

- _____ 1. Very good
- _____ 2. Fairly good
- _____ 3. 50-50 chance
- _____ 4. Fairly bad
- _____ 5. Very bad
- _____ 6. None (SPONTANEOUS)
- _____ 8. Don't know

22. And how about if they didn't evacuate, but were in fallout shelte (Would you say the chances would be very good, fairly good, about 50-fairly bad, or very bad?)

- _____ 1. Very good
- _____ 2. Fairly good
- _____ 3. 50-50 chance
- _____ 4. Fairly bad
- _____ 5. Very bad
- _____ 6. None (SPONTANEOUS)
- _____ 8. Don't know

23. How good would the chances be that people in your area would surv if they were relocated to another location where sheltering against fall would be provided, in the event of a nuclear war? (Would you say survi chances would be very good, fairly good, about 50-50, fairly bad, or v bad?)

- _____ 1. Very good
- _____ 2. Fairly good
- _____ 3. 50-50 chance
- _____ 4. Fairly bad
- _____ 5. Very bad
- _____ 6. None (SPONTANEOUS)
- _____ 8. Don't know

24. Would you (and your family) be inclined to evacuate your place residence and go somewhere else if there were a major international crisis and it seemed very likely that it might lead into a nuclear war?

- ☐ 1. Yes
 - ☐ 2. Probably yes (SPONTANEOUS)
 - ☐ 3. Depends (PROBE)
-

- ☐ 4. Probably no (SPONTANEOUS)
 - ☐ 5. No
 - ☐ 6. Other (RECORD VERBATIM)
-

- ☐ 8. Don't know

A. If you were to evacuate, where would you go?

IF GEOGRAPHIC LOCATION IS NOT MENTIONED THEN PROBE FOR TOWN OR C

25. Do you think there could be a situation in which the President would urge or suggest that people evacuate the cities and some areas of country?

- ☐ 1. Yes
- ☐ 2. No
- ☐ 8. Don't know

26. Do you favor the development of plans to evacuate cities and other areas in the event of a crisis in which war seems very likely?

- ☐ 1. Yes
 - ☐ 2. Depends (PROBE)
-

- ☐ 3. No
- ☐ 8. Don't know

27. Would you and your family leave your place of residence and relocate if the President would urge evacuation or relocation of people?

- ☐ 1. Yes
 - ☐ 2. Probably yes (SPONTANEOUS)
 - ☐ 3. Depends (PROBE)
-

- ☐ 4. Probably no (SPONTANEOUS)
- ☐ 5. No
- ☐ 8. Don't know

28. If the people in your area were to evacuate and go somewhere else because of the danger that nuclear war might start, would there be enough time for them to do so?

- ☐ 1. Yes
 - ☐ 2. Depends (PROBE)
-

- ☐ 3. No
- ☐ 8. Don't know

29. Thinking about your area and the number of people who live there, your opinion, approximately how long would it take to evacuate?

_____ (hours)

_____ (days)

☐ 998. Don't know

30. In a severe international crisis, suppose you noticed that many people in your area were packing and leaving. Would that make you more likely less likely to evacuate?

- ☐ 1. More likely
 - ☐ 2. No difference (SPONTANEOUS)
 - ☐ 3. Less likely
 - ☐ 4. Depends (PROBE)
-

- ☐ 8. Don't know

31. Suppose, on the other hand, that you were to notice that many people in your area decided not to evacuate. Would that make you more likely less likely to evacuate?

- ☐ 1. More likely
 - ☐ 2. No difference (SPONTANEOUS)
 - ☐ 3. Less likely
 - ☐ 4. Depends (PROBE)
-

☐ 8. Don't know

32. Suppose you and your family were in an area which did not have to evacuate and which, in fact, became a host area for evacuees from elsewhere. Would you say your community would be helpful or not helpful?

- ☐ 1. Very helpful (SPONTANEOUS)
- ☐ 2. Helpful
- ☐ 3. Neither (SPONTANEOUS)
- ☐ 4. Not helpful
- ☐ 5. Not very helpful (SPONTANEOUS)
- ☐ 8. Don't know

33. If your community were to receive evacuees, would most people be willing to have evacuees stay in their homes?

- ☐ 1. Yes
 - ☐ 2. Depends (PROBE)
-

☐ 3. No
☐ 8. Don't know

34. Would you (and your family) be willing to have a few evacuees stay in your place of residence?

- ☐ 1. Yes
 - ☐ 2. Depends (PROBE)
-

☐ 3. No
☐ 8. Don't know

35. The Federal Government spent about \$130 million on programs preparedness against nuclear attack in the past fiscal year. That is about 56 cents per person. Do you think this spending should be increased, decreased, or is about right?

- ☐ 1. Increased (ASK 36)
- ☐ 2. About right -----
- ☐ 3. Decreased -----(SKIP TO 37)
- ☐ 8. Don't know -----

36. Would you be willing to pay an additional 25 cents for each member your household per year if used for civil defense purposes?

- ☐ 1. Yes (ASK A)
- ☐ 2. Depends (PROBE AND ASK A)

-
- ☐ 3. No (SKIP TO 37)
 - ☐ 7. Inappropriate
 - ☐ 8. Don't know (SKIP TO 37)

A. How much more than 25 cents per person would you be willing to pay _____ cents

- ☐ 9996. "Any amount necessary"
- ☐ 9997. Inappropriate
- ☐ 9998. Don't know

37. Rather than paying additional money, would you favor shifting money from some other program or programs to increase the civil defense budget?

- ☐ 1. Yes (ASK A)
- ☐ 2. Depends (PROBE AND ASK A)

-
- ☐ 3. No (SKIP TO 38)
 - ☐ 7. Inappropriate
 - ☐ 8. Don't know (SKIP TO 38)

A. Which program(s)?

38. If the nation were well prepared for civil defense against nuclear attack, including local plans, do you think that would help us to cope with peacetime disasters and emergencies?

- ☐ 1. Yes (ASK A)
☐ 2. Depends (PROBE AND ASK A)

-
- ☐ 3. No (ASK B)
☐ 8. Don't know (SKIP TO 39)

A. In what way would it be helpful?

☐ 97. Inappropriate

B. Why wouldn't it be helpful?

☐ 97. Inappropriate

39. Please tell me if you agree or disagree with the following statemen

USE THE FOLLOWING CODES:

1. Strongly agree (SPONTANEOUS)
2. Agree
3. Uncertain (SPONTANEOUS)
4. Disagree
5. Strongly disagree (SPONTANEOUS)
8. Don't know

- A. There is no need for civil defense because nuclear war will not co

- B. Given our strategic might, no enemy would dare to attack, so th
is no need for civil defense. _____
- C. No civil defense program makes sense because it would not be able
help save enough people. _____
- D. Civil defense programs could save many lives should nuclear war e
happen. _____
- E. Police and fire services in evacuated areas would have to be
increased to prevent looting, arson, and other problems. _____
- F. Even if people were to survive a nuclear attack, life would not
worth living. _____
- G. Civil defense programs in general increase anxiety and fear on
part of our people. _____
- H. Civil defense programs make our people more complacent about nucl
war and might lead to a "false sense of security" making nuclear
more acceptable. _____
- I. Civil defense efforts increase the chances of nuclear war becau
they signal to the Soviets that we are preparing to start a war.

- J. Civil defense makes further agreements on arms control more
difficult, if not impossible. _____
- K. By showing that we are prepared for anything that could happen,
civil defense contributes to deterrence and makes nuclear war le
likely. _____
- L. Even after a nuclear war, the survivors could rebuild America an
make the best of it under the circumstances. _____

40. Have you heard the term "nuclear winter"?

- ☐ 1. Yes (ASK A)
☐ 2. No -----|----- (SKIP TO 41)
☐ 8. Don't know-----|-----

A. Would you please tell me what the term means to you?

41. In your opinion, who should have the responsibility for planning w
ought to be done to prevent, or deal with, technological emergencies, s
as nuclear power plant problems, spillages or toxic chemicals? Should
be community volunteers, the private sector, or the government?

CHECK ALL THAT ARE MENTIONED

- ☐ 1. Community volunteers
☐ 2. Private sector (industry, businesses, etc)
☐ 3-6. Government

PROBE FOR LEVEL OF GOVERNMENT

Do you mean local, county, state, or federal
government?

- ☐ 3. Local government
☐ 4. County government
☐ 5. State government
☐ 6. Federal government
☐ 7. Other

SPECIFY _____

- ☐ 8. Don't know

42. Who should have the responsibility for planning measures to deal w natural disasters? (Should it be community volunteers, the private sect or the government?)

CHECK ALL THAT ARE MENTIONED

- ☐ 1. Community volunteers
- ☐ 2. Private sector (industry, businesses, etc)
- ☐ 3-6. Government

PROBE FOR LEVEL OF GOVERNMENT

Do you mean local, county, state, or federal government?

- ☐ 3. Local government
- ☐ 4. County government
- ☐ 5. State government
- ☐ 6. Federal government
- ☐ 7. Other

SPECIFY _____

- ☐ 8. Don't know

43. And who should be responsible for civil defense measures to prot people against a possible nuclear attack? (Should it be commun volunteers, the private sector, or the government?)

CHECK ALL THAT ARE MENTIONED

- ☐ 1. Community volunteers
- ☐ 2. Private sector (industry, businesses, etc)
- ☐ 3-6. Government

PROBE FOR LEVEL OF GOVERNMENT

Do you mean local, county, state, or federal government?

- ☐ 3. Local government
- ☐ 4. County government
- ☐ 5. State government
- ☐ 6. Federal government
- ☐ 7. Other

SPECIFY _____

- ☐ 8. Don't know

44. Please tell me which of the following protective devices you own preventative actions you have taken. (CIRCLE APPROPRIATE RESPONSE)

	YES	NO	DK
A. Do you have a smoke detector in your home	1	2	8
B. Do you have a burglar alarm or security system in your home	1	2	8
C. Do you have special flood or disaster insurance?	1	2	8
D. Do you have a fire extinguisher?	1	2	8
E. Do you maintain an inventory of your household belongings for insurance or recovery purposes?	1	2	8
F. Do you have a radiation detection device in your home?	1	2	8
G. Do you have a first aid kit?	1	2	8

Now I have a few background questions.

45. Are there any individuals who live there that would be considered disabled or handicapped?

- ___ 1. Yes
- ___ 2. No

46. Including yourself, how many people live in this household?

47. What is your position in this household?

- ___ 1. Head of household
- ___ 2. Spouse of head
- ___ 3. Son/daughter of head
- ___ 4. Father/mother of head
- ___ 5. Niece/nephew of head
- ___ 6. Other (SPECIFY) _____

48. What is your marital status?

- ___ 1. Single
- ___ 2. Married
- ___ 3. Divorced
- ___ 4. Widowed
- ___ 5. Separated

ASK 49A AND 49B AS APPROPRIATE FOR RESPONDENT

49. How would you characterize (A. your) (B. your spouse's) curr
employment status? (CIRCLE APPROPRIATE RESPONSE)

	A. Are you currently...	B. Is your spouse currently...
0. Employed full time?.....0		0
1. Employed part time?.....1		1
2. Unemployed/laid-off?.....2		2
3. Retired?.....3		3
4. Self-employed?.....4		4
5. Homemaker (do not work outside home)?.....5		5
6. Currently on strike?.....6		6
7. Inapplicable.....---		7
8. Don't know.....8		8
9. Disabled.....9		9

IF ANY ARE UNEMPLOYED OR LAID-OFF, ASK FOR EACH PERSON UNEMPLOYED:

50. How long have (A. you) (B. your spouse) been unemployed?

_____	_____
You	Your Spouse

51. What type of work ...

	OCCUPATION	INDUSTRY
A. do/did you do?	_____	_____
B. does/did your spouse do?	_____	_____
	(CODE 997 WITHOUT ASKING IF NO SPOUSE)	(CODE 997 WITHOUT ASKING IF NO SPOUSE)

52. How many wage earners are there in this household?

53. How many people in your household belong to a labor union?

54. What is the last grade or year in school that you completed?

- _____ 0. No schooling
- _____ 1. Grammar school (1-8 years)
- _____ 2. Some high school (9-11 years)
- _____ 3. Completed high school (12 years)
- _____ 4. College, incomplete
- _____ 5. College, graduated
- _____ 6. Higher than college
- _____ 7. Technical school
- _____ 8. Don't know

55. Which category best represents your annual household income? Is below \$10,000, between \$10,000 and \$25,000, or over \$25,000?

_____ 12. Below \$10,000

What range does it fall into?

- _____ 1. \$3000 or less
- _____ 2. \$3001 to \$7000
- _____ 3. \$7000 to \$10,000

_____ 13. Between \$10,000 and \$25,000

What range does it fall into?

- _____ 4. \$10,000 to \$13,000
- _____ 5. \$13,001 to \$16,000
- _____ 6. \$16,001 to \$20,000
- _____ 7. \$20,001 to \$25,000

_____ 14. Over \$25,000

What range does it fall into?

- _____ 8. \$25,001 to \$30,000
- _____ 9. \$30,001 to \$40,000
- _____ 10. \$40,001 to \$50,000
- _____ 11. More than \$50,000

_____ 98. Don't know

56. Would you please tell me your date of birth?

Date of birth _____

57. Would you mind telling me your religious preference, if any at all

- ☐ 1. Protestant
- ☐ 2. Roman Catholic
- ☐ 3. Orthodox Catholic (Greek, Russian, etc.)
- ☐ 4. Jewish
- ☐ 5. Other (SPECIFY) _____
- ☐ 6. None
- ☐ 8. Don't know

58. How strongly do you feel about your religious beliefs?

- ☐ 1. Very strongly
- ☐ 2. Strongly
- ☐ 3. Moderately
- ☐ 4. Not so strongly
- ☐ 5. Not strongly at all
- ☐ 8. Don't know

59. Where do you live? (PROBE FOR TOWN, CITY ETC.)

60. How many times have you moved in the past ten years?

61. Are you white, black or some other race?

- ☐ 1. White
- ☐ 2. Black
- ☐ 3. Hispanic
- ☐ 4. Other (SPECIFY) _____

You've been extremely cooperative in answering these questions and like to thank you very much for sharing your views on these important national issues.

I realize that we've been on the phone for a while now, but I have several additional items I'd like your views on, concerning national security, a control, civil defense and emergency management. We could just continue now, or I can call you back another time, whichever is most convenient for you. Which would you prefer?

- _____ 1. Continue now (SKIP TO QUESTION 2, INTERVIEW 2)
- _____ 2. Call back (ASK THE FOLLOWING QUESTIONS)

When would be the best time for me to call you in the next week or _____

May I please have your first name so that I can be sure to speak with you when I call back?

RECORD NAME ON CALL-BACK INSTRUMENT AFTER INTERVIEW

Thank you again for sharing your feelings about these important national issues and I'll talk to you _____ (TOMORROW, NEXT TUESDAY, ETC., AS APPROPRIATE).

IMMEDIATELY AFTER HANGING UP, FILL OUT ITEMS A-I

A. TIME INTERVIEW ENDED: _____ AM
PM

B. DATE OF INTERVIEW:

Month (enter No.) _____
Day _____
Year _____

C. TOTAL LENGTH OF INTERVIEW:
_____ minutes

D. COOPERATIVENESS OF RESPONDENT:

- _____ 1. Very cooperative
_____ 2. Somewhat cooperative
_____ 3. Not cooperative

E. INTEREST OF RESPONDENT:

- _____ 1. Very interested
_____ 2. Somewhat interested
_____ 3. Uninterested

F. RESPONDENT'S LEVEL OF UNDERSTANDING:

- _____ 1. High
_____ 2. Moderate
_____ 3. Low

COMMENT REGARDING THE RESPONDENT'S LEVEL OF UNDERSTANDING:

G. SEX OF RESPONDENT:

- _____ 1. Male
_____ 2. Female

H. CALL BACK DATE AND TIME:

CIVIL DEFENSE AND EMERGENCY MANAGEMENT
May, 1987
Part 2

University of Pittsburgh
University Center for
Social and Urban Research

SAMPLE ID NUMBER: _____
FIPS CODE: _____
INTERVIEWER ID: _____
CASEID: _____

IF CALL BACK:

May I please speak with _____?
RECORD FROM FIRST INTERVIEW

Hello, this is _____ from the University of Pittsbur
I would like to ask you the additional questions we discussed concern
national security, arms control, civil defense and emergency manageme
Can we continue with the interview now?

(ASK QUESTION 1 ONLY IF SECOND INTERVIEW IS NOT A DIRECT
FOLLOW UP)

1. Now that you have had time to think about the issues we discussed
other day, in your view, what is the primary goal of civil defense?

2. I'd like your opinions on some national security issues. For e statement I read to you, please tell me if you agree or disagree. (CIR APPROPRIATE RESPONSE)

	Agree	Disagree	DK
A. No matter what the situation, the United States should never use nuclear weapons.	1	2	8
B. An agreement between the United States and the Soviets to stop the production of more nuclear weapons would make civil defense measures to protect our people against nuclear war less needed.	1	2	8
C. If we can have active defense weapons in space that can shoot down some number of enemy missiles before they can reach their targets, there would be less need for civil defense measures that protect our people against nuclear attack.	1	2	8
D. In arms control talks, we should agree on the reduction of nuclear weapons only if it means that the United States could maintain some superiority over the Soviet Union.	1	2	8
E. Nobody could win in a nuclear war.	1	2	8
F. If the Soviets were to use nuclear weapons against us, we should use them in retaliation.	1	2	8
G. We should stop the production of more nuclear weapons on our own, whether or not the Soviets agree to do the same.	1	2	8
H. Once our technology makes it possible, we should put our active defense weapons into space.	1	2	8
I. We should agree on the reduction of nuclear weapons if it leads to making the Soviets and the United States just about equal in strategic military power.	1	2	8

Agree Disagree DK

J. In an international crisis in which it seems just about certain that the Soviets might use nuclear weapons against our country, we should attack first and use our nuclear weapons to reduce Soviet capabilities for attack.

1 2 8

K. If an enemy, such as the Soviets, were to threaten us with nuclear war unless we meet their demands and conditions, it would be better for all of us to accept their demand and conditions rather than face the possibility of nuclear war.

1 2 8

L. Antimissile defense around key cities and military installations makes civil defense measures to protect our people against a nuclear attack less needed.

1 2 8

M. All tests of nuclear weapons, underground, on the surface, or in space, should be done away with because they get in the way of Soviet-American arms control agreements.

1 2 8

N. The only time we should use any nuclear weapons is if an enemy, such as the Soviets, were to use nuclear weapons against the United States homeland.

1 2 8

O. Civil defense measures to protect our people against a nuclear attack will be more needed if we don't deploy antimissile missiles.

1 2 8

3. Do you think we should increase or decrease government spending for..

USE THE FOLLOWING CODES:

- 1. Increase
- 2. Keep about the same (SPONTANEOUS)
- 3. Decrease
- 8. Don't know

A. Ground based anti-missile missiles, that is, weapons that can dest some number of enemy missiles before they can hit their targets? _____

Would your increase or decrease spending for.....

B. Civil Defense, that is, measures to protect our people against nucl attack? _____

C. The Strategic Defense Initiative, or SDI, that is, weapons in space t can destroy some number of enemy missiles before they can hit their targe _____

D. The arms control effort with the Soviets? _____

4. Which program do you think would be the best for national securi Civil Defense, arms control, SDI, or ground-based anti-missile defe weapons?

- _____ 1. Civil Defense
- _____ 2. Arms control
- _____ 3. SDI
- _____ 4. Ground-based anti-missile defense weapons
- _____ 8. Don't know

Now, for each pair of programs that I read, please tell me which one think achieves the national security objectives better.

A. Civil Defense ____ (1) or Arms Control ____ (2)
DK ____ (8)

B. Ground-based anti-missile missiles ____ (1) or Civil Defense ____
DK ____ (8)

C. Civil Defense ____ (1) or SDI ____ (2)
DK ____ (8)

D. Arms Control ____ (1) or Ground-based anti-missile
missiles ____ (2) DK ____ (8)

E. SDI ____ (1) or Ground-based anti-missile missiles ____ (2)
DK ____ (8)

F. Arms Control ____ (1) or SDI ____ (2)
DK ____ (8)

Now I'd like to ask you some questions about training for emergencies.

5. Have you or any member(s) of your household had

	Respondent	Other Household Member
A. First Aid Training?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 1. Yes
	<input type="checkbox"/> 2. No	<input type="checkbox"/> 2. No
	<input type="checkbox"/> 8. DK	<input type="checkbox"/> 8. DK
		<input type="checkbox"/> 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

B. CPR training?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 1. Yes
	<input type="checkbox"/> 2. No	<input type="checkbox"/> 2. No
	<input type="checkbox"/> 8. DK	<input type="checkbox"/> 8. DK
		<input type="checkbox"/> 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

C. Paramedic Training?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 1. Yes
	<input type="checkbox"/> 2. No	<input type="checkbox"/> 2. No
	<input type="checkbox"/> 8. DK	<input type="checkbox"/> 8. DK
		<input type="checkbox"/> 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

D. Radiological Monitoring?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 1. Yes
	<input type="checkbox"/> 2. No	<input type="checkbox"/> 2. No
	<input type="checkbox"/> 8. DK	<input type="checkbox"/> 8. DK
		<input type="checkbox"/> 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

E. Shelter Management? ☐ 1. Yes ☐ 1. Yes
☐ 2. No ☐ 2. No
☐ 8. DK ☐ 8. DK
☐ 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

F. Training in what to do in case of nuclear attack? ☐ 1. Yes ☐ 1. Yes
☐ 2. No ☐ 2. No
☐ 8. DK ☐ 8. DK
☐ 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

G. Other disaster or emergency related training? ☐ 1. Yes ☐ 1. Yes
☐ 2. No ☐ 2. No
☐ 8. DK ☐ 8. DK
☐ 7. Inappropriate

IF YES, How long ago was that?

RESPONDENT: _____ OTHER: _____

6. Would you be willing to receive or update these kinds of training in future?

☐ 1. Yes
☐ 2. Depends (PROBE)

☐ 3. No
☐ 8. Don't know

7. In the past 12 months, have you been involved in any volunteer work

- ☐ 1. Yes (ASK A)
☐ 2. No (SKIP TO 8)

A. Approximately how many hours per month would you say you spent do volunteer work during the past 12 months?

hours per month

☐ 97. Inappropriate

8. If a call went out for volunteers to participate in a community disaster or emergency preparedness program, would you volunteer?

- ☐ 1. Yes (ASK A AND B)
☐ 2. Depends (PROBE AND ASK A AND B)

- ☐ 3. No (SKIP TO 9)
☐ 8. Don't know (ASK A AND B)

A. Assuming you were to do some volunteer work for community defense if your help were needed, approximately how many hours per month would you be willing to dedicate to such activities?

hours per month

☐ 97. Inappropriate

B. Are there any special ways in which you could help?

- ☐ 1. Yes (ASK C)
☐ 2. No (SKIP TO 9)
☐ 7. Inappropriate
☐ 8. Don't know (SKIP TO 9)

C. Would you please tell me the kinds of activities that would m
suit your talents and interests?

___ 97. Inappropriate

RECORD TIME: _____

9. A number of private homes have basements or other parts of the home which could provide protection against fallout. These places could provide fallout shelter for others in addition to family members. How would you feel about a national program to make such spaces in private homes available to other people in the event of a nuclear attack on the United States? Would you favor or oppose such a program?

- ☐ 1. Strongly favor (SPONTANEOUS)
 - ☐ 2. Favor
 - ☐ 3. Depends (PROBE)
-

- ☐ 4. Oppose
- ☐ 5. Strongly oppose (SPONTANEOUS)
- ☐ 8. Don't know

10. Is there a basement where you live?

- ☐ 1. Yes (ASK A AND B AND C)
- ☐ 2. No (SKIP TO 11)
- ☐ 8. Don't know (SKIP TO 11)

A. Have you ever obtained information about the possibility of using the basement as a fallout shelter?

- ☐ 1. Yes
- ☐ 2. No
- ☐ 7. Inappropriate
- ☐ 8. Don't know

B. Have you ever thought about using the basement as a fallout shelter in case of nuclear attack?

- ☐ 1. Yes
- ☐ 2. No
- ☐ 7. Inappropriate

C. Would you allow your basement to be used as a fallout shelter for other people?

- ☐ 1. Yes
 - ☐ 2. Depends (PROBE)
-

- ☐ 3. No
- ☐ 7. Inappropriate
- ☐ 8. Don't know

11. In the event of a threat of a major disaster of any kind, including possibility of a nuclear attack, what do you think would be the very first means by which you (and your household) would be warned of such a danger?

- ☐ 1. Sirens
 - ☐ 2. Bells
 - ☐ 3. Newspaper(s)
 - ☐ 4. Radio
 - ☐ 5. TV
 - ☐ 6. Friends, relatives, or neighbors knocking on door
 - ☐ 7. Phone calls from friends, relatives, or neighbors
 - ☐ 0. Other (PROBE)
-

- ☐ 8. Don't know

At night, there are special problems in warning people should a disaster emergency threaten.

12. In your household, is there anyone that would usually be awake between midnight and about 6 AM, at work, at home, or some place else?

- ☐ 1. Yes, at work
- ☐ 2. Yes, other than at work
- ☐ 3. Yes, part of the time
- ☐ 4. No
- ☐ 8. Don't know

13. In a night time emergency in your area, do you think many people would try to contact their relatives, friends, or neighbors right away to be sure they know about the potential danger?

- ☐ 1. Yes (ASK A)
- ☐ 2. No (SKIP TO 14)
- ☐ 8. Don't know (SKIP TO 14)

A. What percentage of people in this neighborhood would make such contact? (MUST BE A NUMBER BETWEEN ZERO AND ONE-HUNDRED)

☐ 997. Inappropriate

14. Would you expect anyone from your area to try to contact you to let you know of the potential danger?

- ☐ 1. Yes
- ☐ 2. No
- ☐ 8. Don't know

15. For each of the following activities, would you please tell me wh
ones you do on a regular basis?

USE THE FOLLOWING CODES:

1. Yes
2. Sometimes/occasionally
3. No

- A. Do you use tobacco products? _____
- B. Do you use seat belts? _____
- C. Do you purchase special insurance when traveling
by aircraft? _____
- D. Do you ride motorcycles? _____
- E. Do you snow ski? _____
- F. Do you mountain climb? _____
- G. Do you get a physical examination from your
doctor (at least) annually? _____
- H. Do you take vitamins or eat health foods? _____
- I. Do you exercise on a regular basis? _____
- J. Do you drink alcoholic beverages? _____

Now before we finish, I have a few more background questions.

(ASK ONLY IF CALLBACK)

16. Including yourself, how many people live in this household?

17. How many children under 18 years of age live there? _____

18. How many members of this household are 65 years
of age or older? _____

19. Do you own your home or do you rent?

- _____ 1. Own
- _____ 2. Rent or lease
- _____ 3. Other (PROBE)
- _____

(ASK ONLY IF CALLBACK)

20. Would you please tell me your date of birth?

Date of birth _____

(ASK ONLY IF CALLBACK)

21. What is your position in this household?

- _____ 1. Head of household
 - _____ 2. Spouse of head
 - _____ 3. Son/daughter of head
 - _____ 4. Father/mother of head
 - _____ 5. Niece/nephew of head
 - _____ 6. Other (PROBE)
- _____

That's the end of the interview! Thank you very much for your time cooperation. You have been very helpful to us.

IMMEDIATELY AFTER HANGING UP, FILL OUT ITEMS A-H

A. TIME INTERVIEW ENDED: _____ AM
PM

B. DATE OF INTERVIEW:

Month (enter No.) _____
Day _____
Year _____

C. TOTAL LENGTH OF INTERVIEW:
_____ minutes

D. COOPERATIVENESS OF RESPONDENT:

- _____ 1. Very cooperative
_____ 2. Somewhat cooperative
_____ 3. Not cooperative

E. INTEREST OF RESPONDENT:

- _____ 1. Very interested
_____ 2. Somewhat interested
_____ 3. Uninterested

F. RESPONDENT'S LEVEL OF UNDERSTANDING:

- _____ 1. High
_____ 2. Moderate
_____ 3. Low

COMMENT REGARDING THE RESPONDENT'S LEVEL OF UNDERSTANDING:

SEX OF RESPONDENT:

- _____ 1. Male
_____ 2. Female

H. INTERVIEWER'S SIGNATURE:

APPENDIX B
SAMPLING PROCEDURES

DESCRIPTION OF SAMPLING PROCEDURES

Stratification of Counties

To equalize the probability of telephone household selection from anywhere in the area sampled, samples are first systematically stratified to all counties in proportion to each county's share of telephone households in the survey area. To obtain reasonable estimates of telephone households by county, Survey Sampling, Inc. developed a special data base, beginning with 1980 Census Data for residential telephone incidence. These counts, updated yearly with data on new telephone installations provided at the state level, are then applied to current projections of households by county, published annually by "Sales and Marketing Management" magazine.

After a geographic area has been defined as a combination of counties, the sum of estimated telephone households is calculated and divided by the desired sample size to produce a sampling interval. A random number is drawn between 0 and the interval (125) to establish a starting point. Assuming the starting point is 86, then the 86th, 211th, 461st, etc. records would be selected for the sample - as the sample is selected in a systematic "nth" fashion from a random starting point. Any county whose population of estimated telephone households equals or exceeds the sampling interval is automatically included in the sample, while smaller counties are included with a probability proportionate to their size.

Selection of Numbers within Counties

For each county included in the sample, one or more unique telephone numbers is selected by systematic sampling from among all working blocks of numbers in all telephone exchanges assigned to the county. A working block is defined as 100 contiguous numbers containing three or more residential telephone listings. And in this example, for the exchange 226, the entire block comprises the numbers 7500-7599. Exchanges are assigned to a single county on the basis of where listed residents live. Nationally, about 80% of all exchanges appear to fall totally within county boundaries. For those overlapping county lines, the exchanges are assigned to the county with the highest number of listed residents.

Selection Among Exchanges

Once the sample has been allocated, a second sampling interval is calculated for each county by dividing the number of listed telephone households for the county by the portion of

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the sample allocated to that county. In our earlier example, it was determined that 28% of the sample (1,680 numbers) would be drawn from County A. Each exchange and working block within an exchange are weighted by their share of listed households. If the total number of listed telephone households in the data base for this county is 159,600, then that number divided by 1,680 gives us an interval of 95.

Next, from a random start between 1 and 95, those exchanges and working blocks falling within the interval are sampled on a systematic basis. If a random sample is required, two more digits randomly chosen from the range 00-99 would be added to each of the blocks selected. The result is a complete number made up of the exchange, the block, and the two random digits (e.g., 226 + 75 + 58). In the case of a listed sample, only listed households are selected.

STATISTICAL CHARACTERISTICS
OF RANDOM DIGIT TELEPHONE SAMPLES
PRODUCED BY SURVEY SAMPLING, INC.

I. Summary

By utilizing a massive data base, specialized computer programs and classical statistical techniques, Survey Sampling has developed a method by which highly efficient and unbiased samples of telephone numbers can be drawn along recognized geographic boundaries. Well-conducted telephone surveys using these samples can be reliably projected, on a national basis, to some 79 million American households.

The statistical characteristics of these samples can be described by five criteria proposed by Prof. Leslie Kish, a well-known sampling statistician:

1. The method produces epsem samples in which all telephone households in the geographic sampling frame are given, within the limits of available data, equal probability of selection.

2. The method produces element samples rather than clustered samples.

3. The samples are stratified to all counties in the geographic frame such that the number of telephone households drawn from a county for the sample is proportional to that county's share of telephone households.

4. Samples are drawn systematically from an array of counties and an array of working telephone blocks within each county.

5. The method employs double sampling with the final sample drawn from the county-stratified first phase sample.

A detailed description of the selection process and related data bases follows.

II. The Universe:

79 Million American Households with Telephones

According to a series of excellent national health surveys conducted by the federal government, by 1980 some 93 percent of American households contained telephones. According to the most recent estimates published by Sales & Marketing Management, there are about 85.063 million households in the nation, so that perhaps 79.1 million homes can be accessed by a telephone survey employing random digit techniques.

If the sampling frame was restricted to households listed in published telephone directories, perhaps 30 percent or more of the telephone households would be excluded from a survey. At present, about 63 million households are listed in directories. However, each year about 19 percent of American households move. And when one considers that it may take two or three months to publish and distribute a new directory, it is not surprising that from 12 to 15 percent of the residential numbers in a typical directory are disconnected when called. Thus, directory-based surveys only include some 56 million of the 79 million telephone homes.

If the remaining 23 million telephone households were a random subset of the sampling frame, there would be little need to employ random digit techniques. However, numerous studies have shown that unlisted homes are different: they are younger, more urban, etc. Thus, because of known differences, no serious telephone survey of the population can be based on directory numbers alone.

III. Creation of the Sampling Frame

Before any random sample can be drawn, it is necessary to construct a "frame"--a set of operations which permits selection of specific elements of the population with known probability. In this case, frame construction consisted of a series of steps to narrow the search for 79 million operating residential phone numbers from a pool of 330 million possibilities to a pool of approximately 134 million. Care was taken to minimize the elimination of actual residential listings while at the same time increasing their probability of selection from .24 to .59 or higher.

A list of about 36,000 area code-exchange combinations currently operative in the United States is maintained by the Long Lines division of AT & T and is updated monthly. However, not all these exchanges are used for residential purposes. Some are devoted to internal telephone company use: some held for future expansion; others are assigned exclusively to large companies or government agencies.

To eliminate non-residential exchanges from the frame, a special proprietary data file was developed to include all apparent residential listings from every known telephone directory in the country.

After the names, street addresses, and telephone numbers are transferred to computer tapes, they are geographically coded so that the correct mailing post office and zip code are added to each record. In urbanized areas, the address is also related to Census tracts, block groups or enumeration districts. About 20 percent of the addresses, those located in more rural areas, are identified only by town and county. At present, the file contains more than 63 million households.

Survey Sampling, Inc. developed specialized computer programs which performed the following operations on the file:

- Added the appropriate area code and time zone to each telephone number.

- Sorted all numbers to area code, exchange, and phone number sequence.

- Tabulated the county(ies) of residence for all the listed residential numbers of each exchange.

- Tabulated which ZIP codes were associated with each exchange and the number of listings in each ZIP.

- Counted the number of listings in each exchange.

- Identified the "working blocks" of each exchange, where a block is a group of 100 contiguous numbers (e.g., 1700-1799) and a working block is one which contains three or more listed residential numbers.

This analysis permitted elimination of 12 percent/4,000 of the AT & T exchanges from the sampling frame. This number was chosen to screen out erroneous phone numbers due to key-entry errors. Most eliminated exchanges had no residential listings. In a few instances, Survey Sampling has checked the status of eliminated exchanges with local telephone companies and in each case the exchange was described as "an internal telephone company exchange."

Next, non working "blocks" of numbers were eliminated from working exchanges. Again, a block is considered to be 100 contiguous numbers with each exchange having 100 blocks (e.g., the telephone number 226-7558 is found in block 75 of exchange 226). Examination of patterns of listed numbers supports the widely-held belief that most telephone companies systematically assign groups of numbers for use rather than randomly select them. This practice has to do with the characteristics of switching equipment in rotary exchanges (and a majority of telephones still rely on rotary rather than electronic switching). A component of this practice involved the reassignment of disconnected numbers to new subscribers so that active numbers are densely compressed in a relatively small number of blocks.

Frequency distributions of block density were tabulated by state. Patterns do vary by state, particularly between urban and rural states. The density distribution curves were approximately normal in shape, though skewed to the right towards high density. State modes varied between 55 and 65 percent. That is, the typical listed residential number occurred in blocks in which about 60 of the 100 possible numbers were listed telephone residences. Thus, the chance of encountering a listed household is around 60 percent.

The general pattern of these closely resembles one derived from a national random digit telephone survey conducted at the Survey Research Center of the University of Michigan (Robert M. Groves, "An Empirical Comparison of Two Telephone Sample Designs." Journal of Marketing Research, November, 1978, pp. 622-31). This study estimated national block density of both listed and unlisted residential phones and showed a mode of about .75. The ratio of all telephones to listed phone households is 1.23. Applying this adjustment to .6 (the approximate mode of listed residential density) produces an estimated chance of hitting a phone household of .74.

The close correspondence between the Survey Sampling curves, based on listed residences, and the Groves curve, based on all telephone households, lends empirical support to an important assumption required by the new sampling model:

The assignment of numbers to households is made independently of their publication status in the directory.

If this is true, then unlisted numbers will tend to be found in the same blocks as listed numbers. Further, blocks heavily used for listed households will also tend to have a higher incidence of unlisted numbers, except for those blocks totally filled with listed numbers.

This assumption squares with common sense. If, for example, telephone companies intentionally segregated unlisted residential numbers in certain blocks, the risk of inadvertent disclosure would be heightened. Also, it would be more complicated and expensive for telephone service personnel to process number assignments in two different ways.

The effect of eliminating non-working blocks is quite important. About 60 percent of the possible blocks have not a single listed residential number. This reduces the pool of possible numbers in working blocks to fewer than 134 million and increases the probability of encountering a telephone household to an estimated .6.

At this point, a cautious statistician might well inquire as to the probability of encountering working residential numbers in the "non-working" blocks. Due to the constant assignment of new numbers and growing populations, it is quite likely that a small number of telephone residences are contained in the non-working blocks. However, it seems reasonable to believe that their number would be relatively small and that their inclusion in a survey would have little chance of altering its results. It would be expensive to include such households, and money spent for that purpose would generally be better spent on other aspects of the survey project.

IV. Method of Stratification

In this model, the sampling frame is accessed in such a way as to produce proportionate stratified random samples from working blocks of exchanges located within specified geographic boundaries. The method of stratification is highly important to the control of bias that might be introduced through improper use of the sampling frame.

The problem is that the incidence of unlisted numbers is quite variable from one area of the country to another. Generally, the use of unlisted numbers is much more an urban phenomenon than a rural one. But great variation is found even among large cities and in certain rural areas. For example, in Minneapolis and in St. Paul, 90% of residents list their number in the directory but in Chicago, perhaps 35% of the numbers are unpublished. Thus, without adjustment, the sampling frame would tend to under-represent Chicago and over-represent Minneapolis.

To equalize the probability of telephone households being selected anywhere in the country, samples are first systematically stratified to all counties in proportion to each county's share of telephone households in the survey area. To obtain reasonable estimates of telephone households by county, a special data base was developed, beginning with county estimates

of telephone incidence measured in the 1980 Census of Population and Housing. These figures are then applied annually to household estimates calculated by Market Statistics for Sales & Marketing Management magazine to produce estimates of total telephone households by county.

After a geographic area has been defined as a combination of counties, the total of telephone households is calculated and divided by the desired sample size to produce a sampling interval. The counties are then ordered (normally by alphabetical state and county within state). A random number between one and the sampling interval is generated and a cumulative count of telephone households is calculated. At the point at which the accumulation reaches the random starting point, a specific county is selected. The second point is one interval away from the first point. Counties whose population is greater than the sampling interval of telephone households will be selected repeatedly and counties whose population is less than the sampling interval have some chance of being skipped. In this way, the sample is distributed across all counties in proportion to their share of the total population of telephone homes.

A second level of stratification occurs when specific working blocks within a selected county are selected. Two methods of systematic selection are available. In Method A, the total number of working blocks is calculated and that sum is divided by the number of sampling points assigned to the county. This produces a sampling interval in which all blocks have an equal chance of being selected. Blocks within a county are ordered in ascending order by exchange and block number within exchange.

From a random start within the first interval, one or more blocks are selected in a systematic fashion. Once a specific block has been selected, two random digits in the range 00-99 are number is discarded and replaced by a new number from the same block. Thus, in Method A, all working blocks are given equal probability of selection regardless of their utilization for listed residential numbers.

Method B offers an optional variation and generally produces noticeably more efficient samples than Method A. In this approach, the sampling interval is calculated by summing the number of listed residential numbers in each working block and dividing that sum by the desired quantity of numbers.

Thus, each block's chance of being selected is proportional to its share of listed homes so that more active blocks have a greater probability of selection. Yellow Page business listings are eliminated from the sample in Method B just as they are in Method A. Method B has proven markedly more efficient than Method A, adding typically ten points to the chance of

encountering a working residential number. Although exhaustive tests of possible bias that might be introduced by Method B have not been completed, tentative evidence does not suggest that bias is present.

The methods of stratification described in this section have been developed primarily to equalize the probability of selection for all telephone homes in the United States. To the extent that this has been successful, the resulting samples resemble epsem samples in which all population elements have equal probability of selection. Such samples have the advantage of being self-weighting (assuming the sample is expertly executed as the survey proceeds).

These samples are also element samples in the extreme, since careful steps are followed to avoid clustering of sampling points in any fashion. The use of clustering, though usually necessary when personal interviewing is required in the field, almost always has adverse affects on the statistical efficiency of a survey. For example, Groves reports that the use of 9-element clusters in a national telephone survey increased error estimates from 17 to 40 percent. Stated another way, this modest use of clustering (employing the well-known Waksberg method) would require a sample 37 to 69 percent larger than a simple element sample.

Finally, upon selection, samples are ordinarily ordered by time zone, area code and exchange and then systematically divided into a number of subsamples or replicates. When administered in replicate order, it is a simple matter to control the geographic distribution of a telephone survey as interviewing proceeds.

Revised 3/25/88

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—Public Views in 1987—

Unclassified, University of Pittsburgh, December, 1987, 161 pp.
FEMA Cooperative Agreement: EMW-K-1024, Work Unit 4851B
Abstract

This report presents an overview of findings, derived from a 1987 national telephone survey, on current public sentiment as it relates to numerous crucial civil defense issues and concerns. A primary objective is to provide empirically based insight into some of the common arguments presented as decisions on complex national policy alternatives. Emergency planning and preparedness measures, in place or considered for future implementation, that address the threat of natural disasters, technological hazards, and particularly those relevant to the threat of a nuclear confrontation are explored.

The public's perception of what the principle goals of civil defense should be is questioned. Their acceptance of a nuclear attack as a credible threat is assessed, as well as their estimates of probable survival rates under a variety of passive defense conditions. The perceived viability and value of alternative civil defense measures and the public's expectations regarding governmental responsibility for implementing such measures are explored. Willingness to finance such measures or to reallocate existing funds to civil defense efforts is reported as another indication of support. The acceptability of crisis relocation is evaluated through inquiries into the public's support for the development of a national relocation plan, their intentions to evacuate when

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threatened, either spontaneously or in compliance to a Presidential directive and their expectations of such a directive becoming a reality. The expected influence of the actions taken by neighbors is assessed. The amount of warning time expected in the event of an attack and the public's estimation of the time required to evacuate are compared. Expected initial warning sources, during the day and at night, are provided. The public's attitude toward, and priority given to numerous strategic alternatives as well as national policy alternatives are documented. Respondents are given an opportunity to accept or reject arguments that civil defense measures influence individual attitudes towards war, promoting complacency in this country, and increasing the probability of a conflict by antagonizing our enemies.

Although the survey focused heavily on national security concerns, issues relevant to peacetime hazards or emergency management in general were also addressed. The extent to which people believe preparedness for nuclear war and preparedness for natural or technological hazards are mutually beneficial is explored. The public's expectations of experiencing a natural or technological disaster are outlined, as well as the degree of risk assigned to a variety of different threats, particularly those associated with nuclear power. The willingness of the public to share the responsibility of dealing with an emergency, either through volunteer work, home basement sharing or by participating in the planning and preparation necessary, is reviewed. An assessment is made of the training already acquired by the respondents, as well as their willingness to update or obtain emergency relevant training in the future. The data provides evidence of, not only the strong altruistic and cooperative tendencies of the American public, but also the strong public support, generally, for civil defense programs.

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